

The Cotton Gin and Oil Mill

# PRESS

A PROGRESSIVE AND RESPONSIBLE PUBLICATION

SEPTEMBER 8, 1956

57<sup>th</sup>  
year

THE MAGAZINE OF THE COTTON GINNING  
AND OILSEED PROCESSING INDUSTRIES



IN THIS ISSUE:  
Proceedings  
Tenth Annual  
Cotton Mechanization  
Conference

Atlanta — Experiment, Georgia  
August 22 - 23 - 24

•  
Sponsored by  
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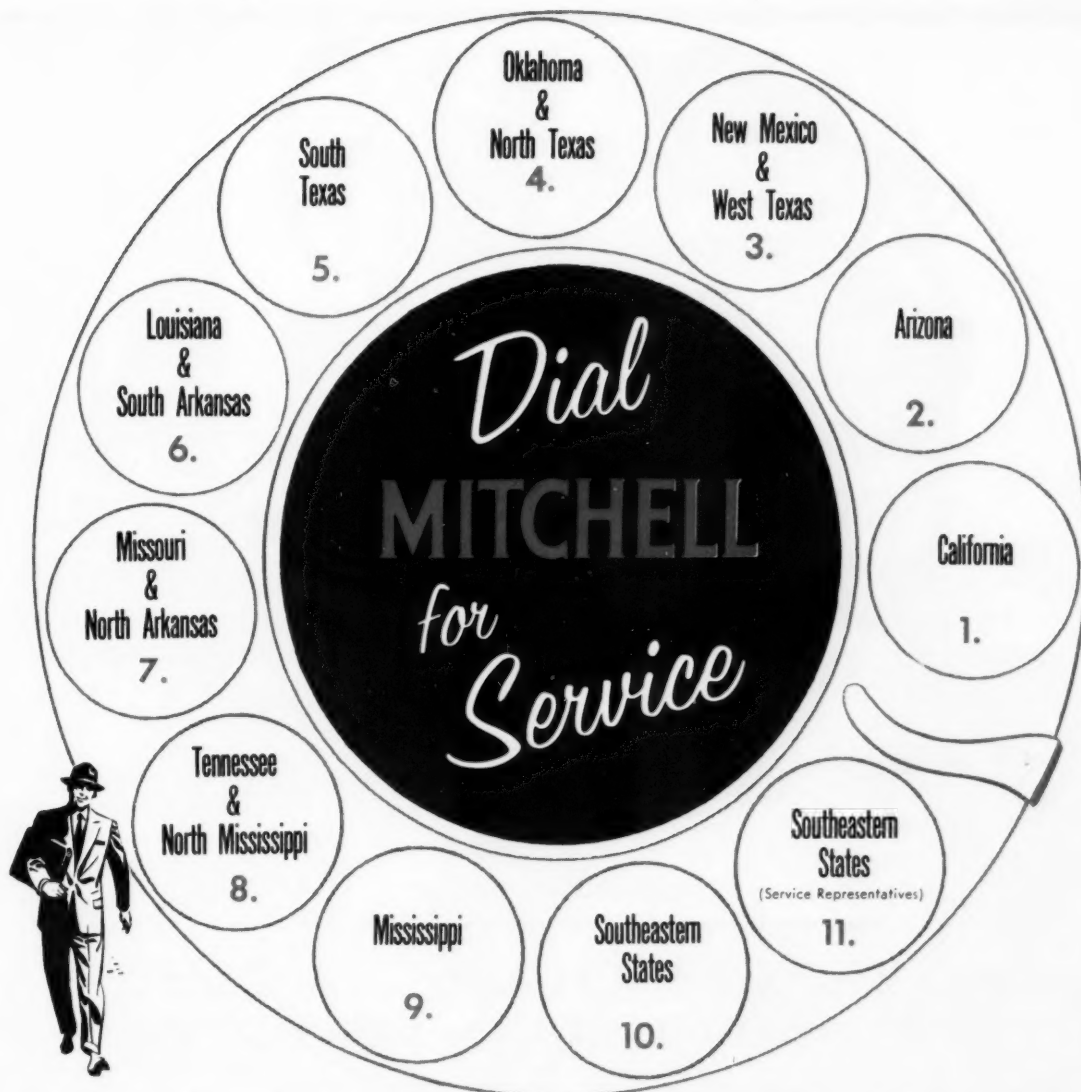
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This is the time of the year when all across the cotton belt, the ginnerers of America are throwing their gin breasts into operating position for the first time on the 1956 crop.

They face many problems. One ginner will be operating new equipment, still requiring adjustment. Another will be doing his best with old equipment... perhaps bucking competition from a more modern gin outfit nearby. And another will be starting out with green hands.

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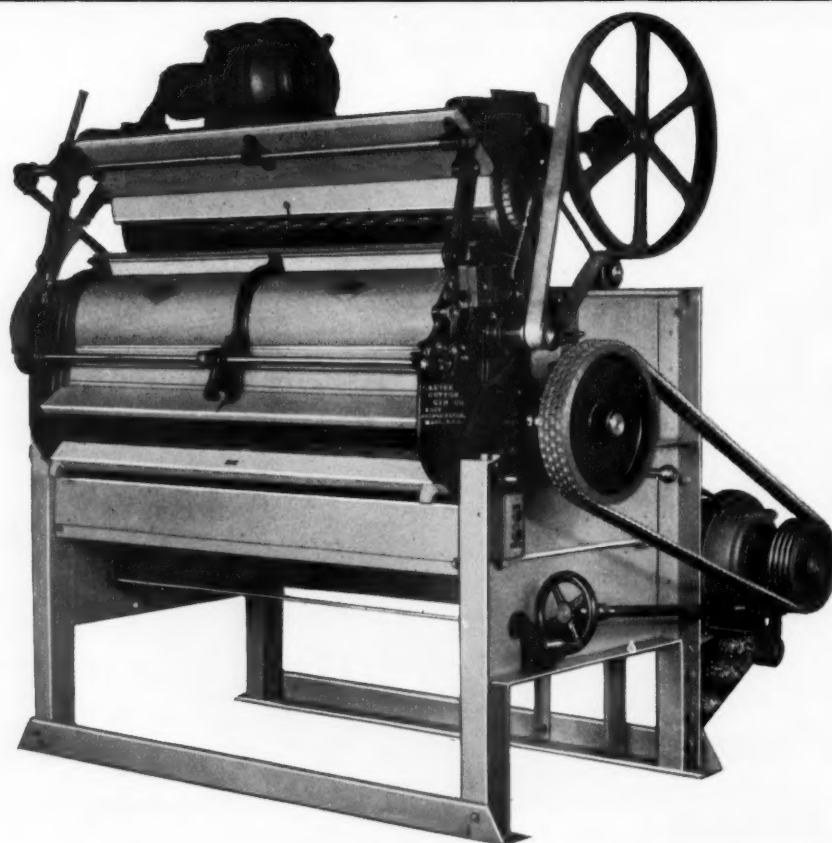
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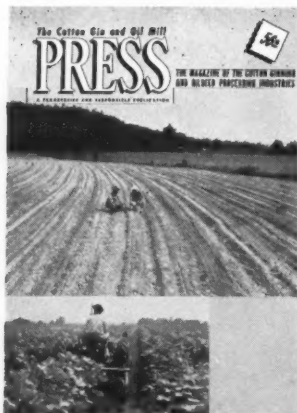
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National Cotton Ginner's Association

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California Cotton Ginner's Association

The Carolinas Ginner's Association

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★

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#### ON OUR COVER:

The beginning and the results of sound production practices which are the foundation for efficient mechanization are pictured on the cover of this issue, which reports the 1956 Beltwide Cotton Mechanization Conference. The larger scene shows a good, firm seedbed, with enough complete fertilizer properly placed, which is the essential start for high yields and efficient use of mechanical equipment. In the smaller scene is high-yielding cotton which results from proper crop rotation, fertilization and other good production practices.

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### THE COTTON GIN AND OIL MILL PRESS

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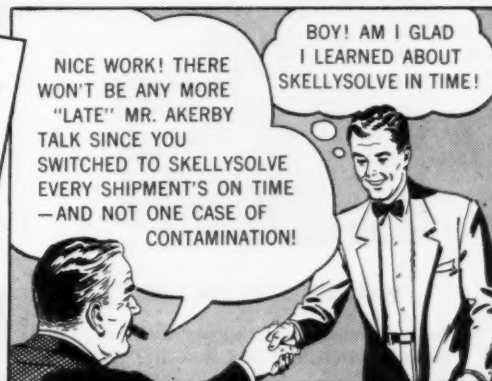
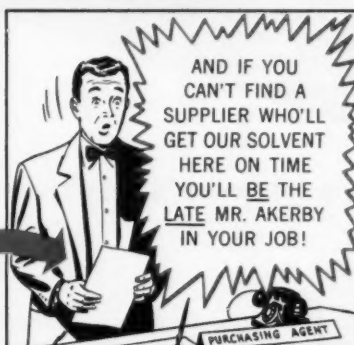
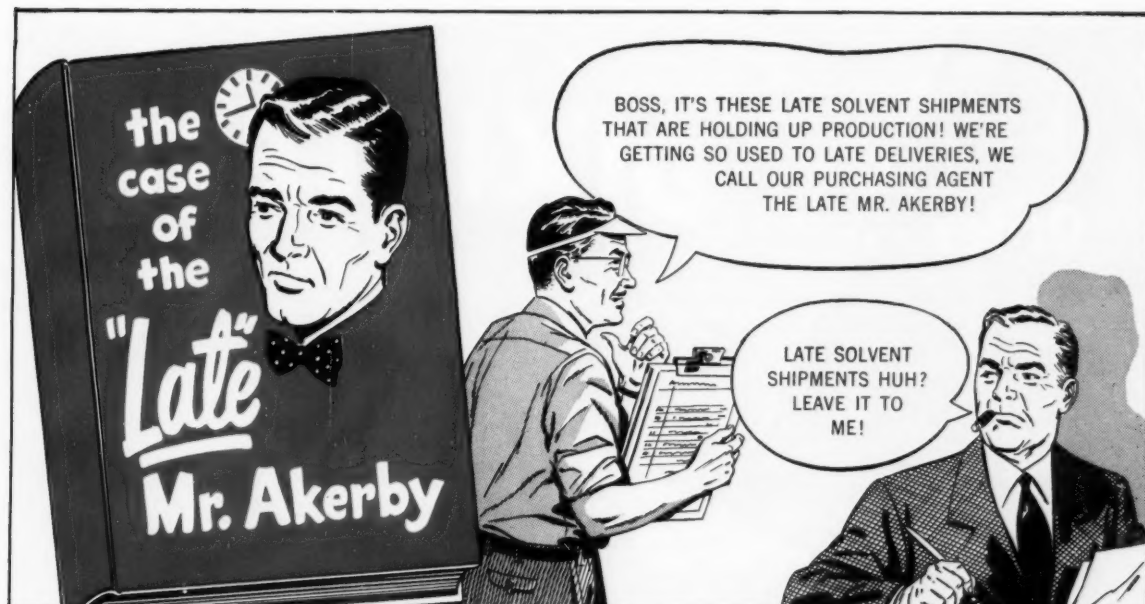
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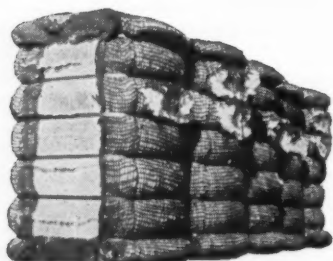
# DIXISTEEL

TRADE MARK

## Cotton ties and buckles

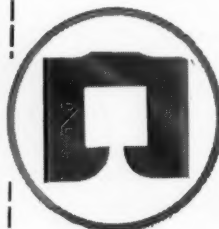


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# DIXISTEEL

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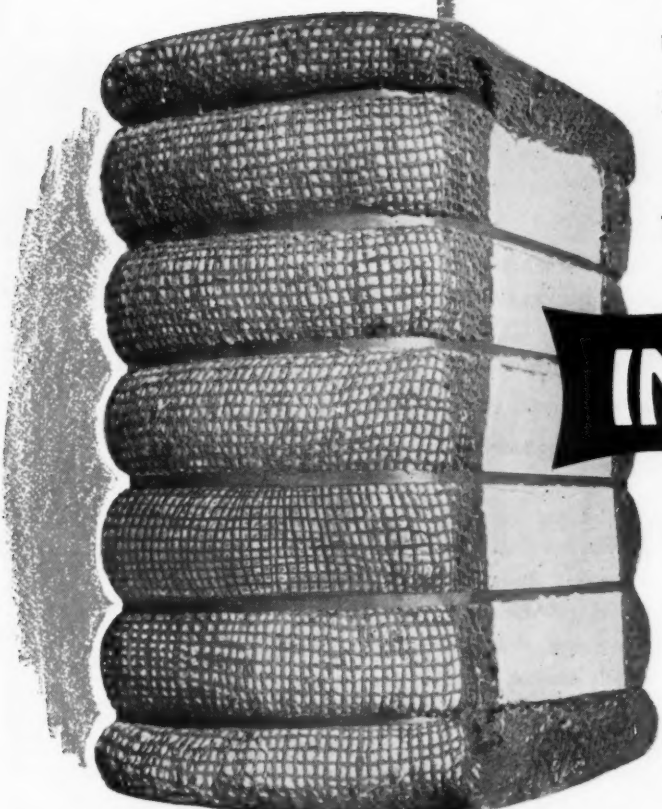
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has been the leading cotton conditioner for twenty years. That's because it—

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LEADERS who participated in the opening session of the tenth annual Beltwide Cotton Mechanization Conference are shown here. Left to right are Dr. George H. King, Athens, director of Georgia Experiment Stations; E. Lee Langsford, agricultural economist, USDA, Washington; R. Flake Shaw, Greensboro, N.C., general chairman for the Conference and executive vice-president of North Carolina Farm Bureau Federation; Wm. Rhea Blake, Memphis, executive vice-president, National Cotton Council; and Dr. C. C. Murray, Athens, dean, University of Georgia College of Agriculture.

## Proceedings:

# Tenth Annual Beltwide Cotton Mechanization Conference

**PRE-HARVEST equipment and practices receive major attention at 1956 meeting, held Aug. 22-23-24 in Atlanta and at Georgia Experiment Station under sponsorship of National Cotton Council and cooperating organizations.**

THE FOLLOWING ADDRESSES and panel discussions were presented during the tenth annual Beltwide Cotton Mechanization Conference, Aug. 22-23-24. The conference was held at the Biltmore Hotel in Atlanta, and at the Georgia Experiment Station. The National Cotton Council sponsors this annual meeting, with the cooperation of USDA, land grant colleges of the Cotton Belt, the farm equipment industry and others.

## Opening Statement

By R. FLAKE SHAW, Greensboro, N.C., Chairman, Mechanization Conference Steering Committee.

If this conference had been held last week, it would have been an anniversary week. For, as many of us know, the first Beltwide Cotton Mechanization Conference was launched nine years ago last week at Stoneville, Miss. And, as we also know, there has been one each year since then in some state across the Cotton Belt. Those nine years have been chock-

full of mechanization progress — progress which has helped lower the cost of producing quality cotton, progress which has helped increase incomes of those who produce and handle this commodity; progress which has helped strengthen cotton's competitive position.

Only recently I read that, on the average, cotton production costs today are at least five to six cents per pound less than they would be if we were using the practices which were followed a decade ago. Without this progress, it's doubtful that cotton would still be a profitable crop in most areas.

But the future is what counts. And we are here, as a big team working together, to probe deeply into what can be done toward speeding up needed progress in the future. In one way or another, all of us here are directly concerned with, have a big stake in, and can make a major contribution to this matter of speeding up the rate of future progress in cotton production efficiency. The idea is that we can move ahead faster if we all move ahead together — if we move ahead as a team.

## Welcome Address

By C. C. MURRAY, Athens, Dean and Coordinator, University of Georgia.

In welcoming you to Georgia, I believe I should point out a few salient facts about your host state.

Georgia, the largest state east of the Mississippi River, has historically been one of the leading cotton-producing states.

Our population is 3,621,000, with 24 per cent of this number making their living on farms. Since 1930, the number of people on farms in Georgia has decreased 34 percent, while the number of people living in urban centers has increased 76 percent.

Our state is rapidly becoming industrialized, so that today we have a better balance between agriculture and industry than ever before in our history.

Our farms today are using more machinery, better seed of adapted varieties, more up-to-date cultural practices, more commercial fertilizers of higher analysis, more effective fungicides and insecticides, better livestock and management — all of which have played an important part in raising the cash income per farm family by six times over the past 20 years.

While we are proud of the progress we have made in agriculture in Georgia, we know we must address ourselves to the many problems and opportunities which lie ahead. One of these problems



relates to the future of cotton from the point of view of the role of more efficient mechanized production. For this and other reasons, we are happy that the University of Georgia could be host institution for this meeting.

We are proud of the fine relations which exist between our program in the College of Agriculture at the University, other state and federal agencies, and the cotton industry. We believe in and practice cooperation. That spirit has typified this Beltwide Mechanization Conference. We hope that your meeting in our state will be pleasant and informative to each of you.

## How Big Is the Future Of Cotton?

By WM. RHEA BLAKE, Memphis, Executive Vice-President, National Cotton Council of America.

The old, old question of whether cotton really has much of a future is still with us today. In fact, the answer is being sought with a greater sense of urgency than at any other time since the 1930's.

We have to face some hard facts. Our carryover of cotton has swollen to over 14 million bales, and growers have had to take heavy cuts in acreage. Our export market, which usually accounts for a third or more of total consumption, has shrunk to an intolerably low level over the last few years.

Rayon, our big synthetic competitor at home and abroad, is substantially lower than cotton in its net cost to mills.

In research aimed at cost reduction

## Next Conference In Louisiana

Louisiana will be host to the eleventh annual Beltwide Cotton Mechanization Conference, it was announced following the tenth conference, which is reported here. The mechanization group will gather in Shreveport Oct. 2-3-4, 1957, for meetings, followed by a demonstration at the nearby Red River Valley Experiment Station.

and fiber quality improvement, the U.S. synthetic fiber industry is outspending cotton by more than four to one. In sales promotion, cotton suffers an even greater disadvantage.

These are facts, and, examined by themselves, they don't portend a very big or a very bright future for cotton.

But there are other facts we need to consider—other facts that can work strongly in cotton's favor.

We know that textile markets, as a whole, will expand tremendously in the years ahead. We're dead sure about this for two reasons: First, world population is jumping by tens of millions of people every year; second, there's enormous pressure among underprivileged peoples for a better standard of living—including more and better textile products.

The textile pie is going to get far bigger, and if we hold on to our present share of that pie—or even if we keep our share from being reduced very

much—the annual consumption of our cotton will go up by millions of bales.

Whether cotton will be able to hold its share of the market is a big question. The answer, of course, is conditional. Cotton has a wonderful chance to hold its share of the market—perhaps even increase it—if we can get the right combination of: (1) *RESEARCH* to keep our fiber competitive in quality and price; and (2) *SALES PROMOTION* to generate and retain consumer preference for cotton products.

We've already noted that cotton currently is being badly outgunned in research and promotion—these two most fundamental weapons for survival and success in any competitive business.

But remember this all-important fact: Cotton, with a program that admittedly falls well short of its needs, has demonstrated a great ability to respond to scientific research and imaginative sales promotion.

• **Has Vast Potential** — Cotton's response to a sharply limited program of research and promotion clearly indicates the vast potential for progress we would have with an adequate program. And the fact that the cotton industry has become keenly aware of this potential—the fact that the industry is taking positive action to develop more adequate research and promotion—is perhaps the best indication we have that cotton is not ready to settle for a static or declining future.

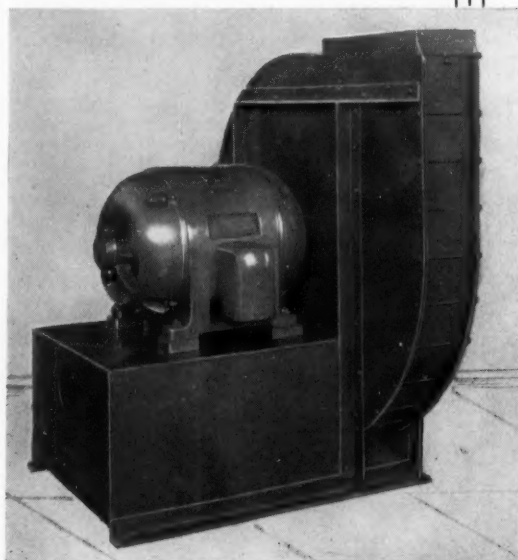
Our whole industry is geared up for —is crying for—an expanding market. Just look at our production system. Our present ability to produce cotton far ex-

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ceeds our ability to sell it. Now, one of the obvious things we need to do to sell more cotton is to get our costs down. This would not only give growers a much-needed boost in returns, but also would strengthen our ability to compete with other fibers in price.

How do we push costs down? In only one way, and that is by developing lower cost practices through research, and then putting these practices to work through education, management and capital investment.

But, more often than not, improved practices lead to improved yields per acre and a bigger total capacity to produce cotton. Or, in the case of mechanization, a grower frequently needs to revamp his production setup—perhaps buy more land—in order to realize the

cost-reducing potential of, say, a mechanical harvester.

So the very things we look to for cost reductions may have limited value to growers unless they have freedom to expand their production. Such freedom is possible only with an expanding market for cotton.

In short, we need cost reduction to help win an expanding market. But we must have an expanding market or we lose a large part of our potential for cost reduction. We must have both or we aren't likely to have either.

There are a number of powerful forces pushing cotton toward a dynamic future—forces which say that cotton can have no future unless it is dynamic.

Look, for example, at the long-term

trend for labor to move out of agriculture and into industrial employment. From 1939 through 1955, the farm work force dwindled from 9.6 million to 6.7 million—a drop of about 30 percent.

Factory employment, on the other hand, shot up from 10.1 million to 16.6 million—a gain of over 56 percent. A great big part of the additional factory work force was recruited out of agriculture. The out-migration of labor from cotton farms was so big, and the upward pressure on wages so strong, that we had to do something and do it fast. The answer, of course, was mechanization, which has, in a sense, become a symbol of the dynamic approach to cotton's future.

The tremendous pressure for more mechanization is not likely to let up for any appreciable period of time. In fact, it will almost surely get stronger. American industry is in a period of growth that seemingly has no end. As its labor needs get bigger and bigger, it pumps away harder and harder at a farm labor pool that gets smaller and smaller.

As long as industry offers much higher wages than agriculture, its pumping action on the farm labor pool will continue to be effective. And, at the same time, there will continue to be a strong tendency for farm wages to rise faster, proportionately, than industrial wages.

Since 1939, average wage rates for farm workers have gone up by about 320 percent, while average rates in industry went up by less than 200 percent.

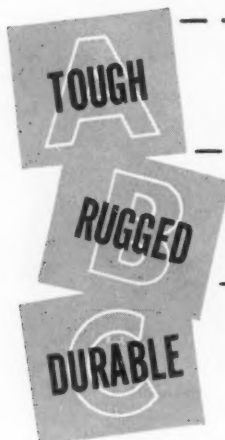
Our shrinking farm labor force, together with the long-term trend in wages, speaks worlds on the subject of cotton's future. It says emphatically that we must mechanize—that we must employ every useful result of science and technology in improving labor productivity and reducing costs. It says that we must make the fullest possible use of research and promotion to build an expanding market. It says that the dynamic approach is the only approach to a real future for cotton.

There are other powerful forces at work which bring us the same message. In this country, as in no other, we believe that a dynamic, competitive economy serves the best interests of all the people. That belief is justified by the whole history of our nation's economic development, and certainly we've found no reason for changing it in the last several years. Since World War II, this country as a whole has had the most dynamic and spectacular period of economic growth the world has ever known. The most outstanding exception has been agriculture. It has not been keeping pace with the rest of the economy.

• **Must Be Dynamic** — This can and must be changed. In the long run, the American public will expect—will demand—that agriculture be as dynamic and progressive as the rest of the economy.

Agriculture itself has a growing awareness of this fact. More and more agricultural groups are organizing self-help programs of promotion and research. Equally important, these groups are joining together in fighting for an increase in the type of public assistance that really fits in with the dynamic character of the American economy; and here, of course, I'm referring to the long-standing public programs of farm research and education—programs which

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extra strength for  
cleaner, stronger bales

maximum protection  
from weather.

THESE ARE THE QUALITIES THAT MAKE "PRIDE OF INDIA"  
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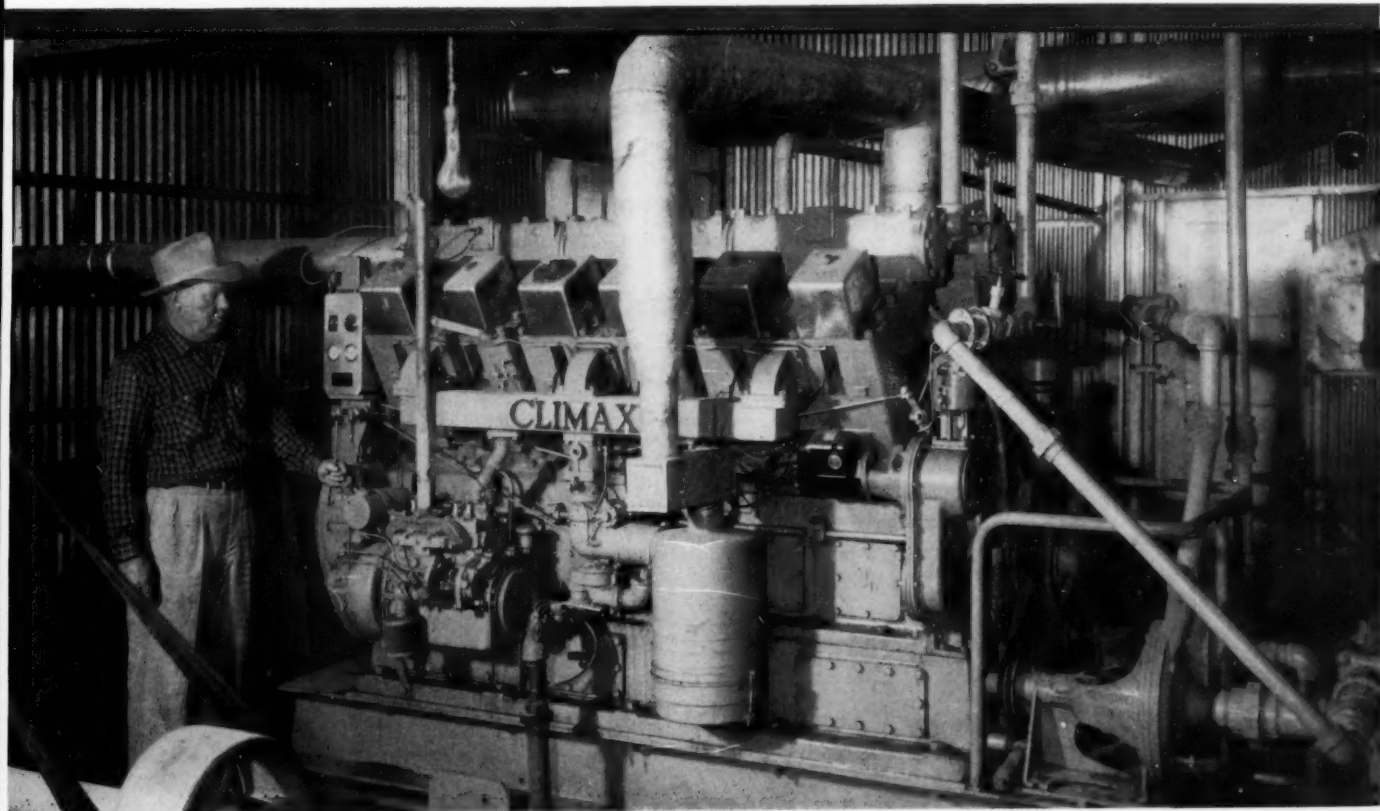
### C. G. Trading Corporation

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Stocks Maintained in Houston and Corpus Christi, Texas; Charleston, South Carolina

**4709 BALES GINNED . . .**  
**at 9¢ per Bale for Fuel with our *climax***

reports W. C. Sentell, co-owner, Sentell Gin Company, Shreveport, La.



In the northern area of Louisiana . . . as in all other cotton growing areas . . . Climax Blue Streak Engines have established confirmed reputations for dependable, low-cost-per-bale operation.

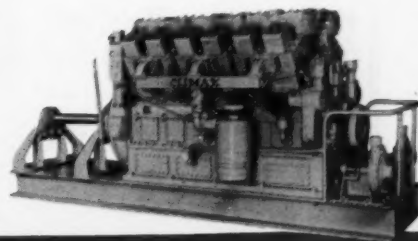
Here's a direct report from Mr. W. C. Sentell on his Climax: "We purchased our Climax engine Model V125 July 1, 1953. We started operation on September 7, 1953, setting the RPM at 996 which handled a load of 328 H.P. Throughout the season we ginned a total of 4709 bales at a cost of 9¢ per bale on gas consumption (gas being a price of 30¢ per thousand). We changed oil on 2400 bales, adding 5

gallons before change. We ran the balance of the season and added only 5 gallons more. The total hours run were 950. Our Climax Model V125 has been very satisfactory and we have been highly pleased with the performance and economy of this unit."

Climax makes six famous models to fit your requirements, with continuous duty power ranges from 180 to 450 horsepower . . . all designed, engineered and constructed to operate on either natural gas or butane especially for the cotton gin industry. Contact your nearest Climax Blue Streak Distributor. He can show you how Climax Engines can give you the most dependable, lowest cost-per-bale operation.

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Tobin Machinery Co.  
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United Power, Inc.  
 (Formerly United Tool Co.)  
 Shreveport and Alexandria, La.



help us grow better products at lower cost—programs whose essential importance has been partly obscured by our concern with emergency problems.

All this adds up to one thing: All agriculture, including cotton, must have a dynamic approach to the future—because farmers are demanding it, and because the general public will demand it.

Now let me mention just one more of the forces pushing cotton along the dynamic route, namely, our export situation.

It's in the export situation that we find one of the biggest causes of our present trouble, plus one of the biggest threats to our industry's survival in the future.

But it's here, too, that we find one of American cotton's brightest opportunities, not only in the long run, but in the years immediately ahead.

For the export market, by its very nature, is explosive. It is so explosive that within the next two or three years our exports could virtually disappear—or they could double or even triple.

Our domestic market is, of course, tremendously important. It is by far the biggest part of our total market, and holds great possibilities for future expansion. However, we know it is not characteristic of our domestic market to change radically in short periods of time. It seldom varies more than a few hundred thousand bales, up or down, on a year-to-year basis. It's the trend in domestic consumption, measured over a period of years, that gives us a realistic picture of how well we're doing at home.

But the export market is far differ-

## ■ Brief . . . And to the Point

M. L. McLAIN, Assistant Secretary of Agriculture, Washington, said in his address at the 1956 convention of the American Soybean Association:

"I want to express appreciation for the constructive attitude taken by soybean producers and their representatives toward possible increases in price supports. They did not urge that supports be raised. They were conscious of the fact that they should look for their best returns in the free market, and that price supports should not be high enough to interfere with normal marketing."

ent. For one thing, the total market for which we compete overseas—which includes rayon as well as cotton—is more than 2½ times greater than it is at home. And ever since World War II, that overseas market has been expanding at an average rate of about two million bales a year. Furthermore, a great deal of new promotional effort—aimed specifically at keeping the consumption of cotton expanding—is now being started in foreign countries. I am happy to report that the National Cotton Council is now working with 10 foreign countries in this effort.

Now just think for a moment about

the foreign market for cotton and rayon: A huge market—something like 33 or 34 million bales a year right now—and tending to expand by another two million bales with every succeeding year.

Think what our exports would be today if we had held on to, or increased, our traditional share of the foreign market. Think what our exports could be in the next few years if we are able to re-establish a sound position in that huge, dynamic market overseas.

Whether we do so—whether we get our rightful share of this expanding market—is going to depend on our success or failure in slowing down, or reversing, the long-term trend for expansion in foreign cotton and rayon production.

Why have we seen our exports go from bad to worse during a period when foreign demand for our type of fiber was rising at the terrific rate of two million bales a year? There's just one reason. Foreign production has been rising just as fast as foreign consumption—and sometimes faster.

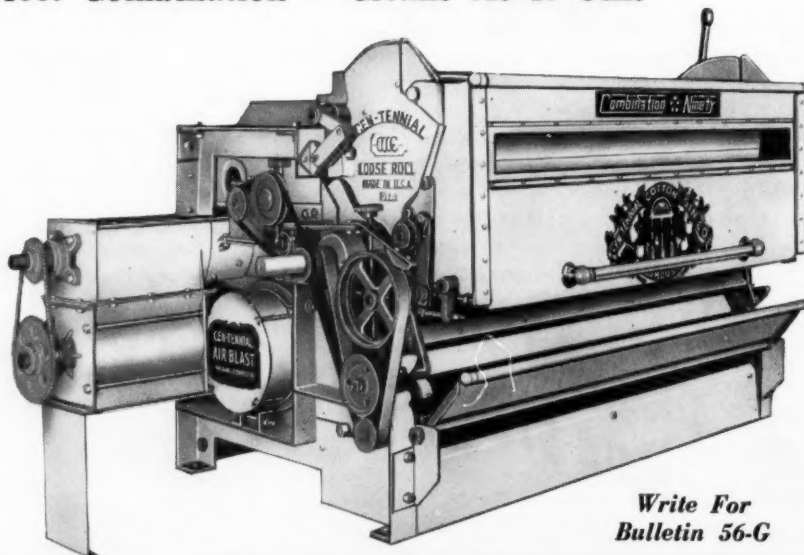
Production of cotton overseas has almost doubled since 1946. Production of foreign rayon, which is often substituted for or blended with cotton, has more than quadrupled during the same period.

Here we see just why our cotton has not gained—in fact has been pushed back—in the export market. Foreign cotton and rayon producers have been expanding so rapidly that they have more than matched the increase in foreign consumption. They are now making a strong bid to squeeze us completely out of the export market. If they

## The IMPROVED 1956 Model Five Star *Combination* ★★ ★ *Ninety*

"The Perfect Combination — Cleans As It Gins"

- ★ Greater Capacity
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*The Cotton of the Future... Available for '57*

A distinctly new member has been added to the Stoneville Family of Quality Cottons. Available for general planting in the spring of 1957, Stoneville #7 will bring you a new combination of characteristics to meet the exacting demands of "profit conscious" farmers and mill buyers. High gin turn-out (equal to any)—Quality lint (length and micronaire, as preferred by the mills)—Sparse foliage on upright plant (better penetration of sunlight, cleaner picking). Add to these qualities "Heavy Production" (check the records) and you get—Stoneville #7, a cotton that can mean more profit for you . . . in '57

- ★ **HIGH GIN TURNOUT**
- ★ **MINIMUM FOLIAGE**
- ★ **HEAVY PRODUCTION**

**BREEDERS • ORIGINATORS**

**Stoneville** Pedigreed **Seed Co.,**  
STONEVILLE, MISSISSIPPI

**The "BIG 3" for '57**  
from

**STONEVILLE, U.S.A.**

There's a STONEVILLE COTTON hand picked for your specific needs!

- **STONEVILLE 3202**  
for EXTRA Earliness!
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for EXTRA STAPLE!
- **And NOW—the NEW STONEVILLE #7**  
for High Gin Turnout!

All developed for the single purpose of making you more money per acre . . . all released at peak of performance in BREEDER'S REGISTERED SEED . . . Direct from Stoneville, U.S.A.

Write for information on the "BIG THREE." Make 1957 your greatest Cotton Year!

are successful, the American cotton industry will face disaster.

But, as I said earlier, the situation can explode in just the opposite direction. Our exports could double or triple over the next few years—if we can reduce or reverse the trend toward expansion of foreign rayon and cotton production.

If we can simply hold foreign production to its present level, the two-million-bale-a-year upward trend in foreign consumption should mean a huge increase in U.S. exports. Over a three-year period, this could easily raise our annual level of exports by six million bales.

Consider, too, what it would mean if we could achieve a reduction of something like 10 percent in total foreign production of cotton and rayon.

Ten percent of the present foreign production of 33 or 34 million bales would fall little short of 3.5 million bales—and our level of exports would tend to go up by that amount.

When we add this to what we would accomplish simply by checking further expansion of production and taking advantage of added consumption, we see how explosive the export situation could be in favor of U.S. cotton.

• **No Easy Task** — But the task of exploiting that situation—of making it explode in favor of U.S. cotton—is not going to be easy. One of the big reasons why foreign production of cotton and rayon has increased so much is that the cost of labor overseas is only a small fraction of the cost of labor in this country. With their low-cost labor, foreign countries have been able to sell their fibers at our price—or slightly below our price when necessary—and still come up with attractive enough profits to stimulate huge expansions in production.

There's just one basic way to meet the challenge of low-cost foreign labor—just one way to meet foreign price competition and still keep cotton a profitable crop for American growers. And that, quite obviously, is to take fullest possible advantage of our head-start in, and our great potential for, making technological progress in cotton production.

Just as the advantage of low-cost labor is all on the side of foreign producers, so is technology all on the side of the American cotton grower. The U.S. is the most highly industrialized country in the world. No other cotton-growing country even remotely approaches us in this respect. Think what an advantage it gives us to have readily available our tremendous American industrial capacity for producing machines and chemicals and other materials. Think what it means to have our reservoir of engineering skill, our transportation and communication systems, our financing arrangements, and the like—not to mention the great advantage we have in our present system of agricultural research and education.

The technological advantage is ours. And if we exploit it fully enough, we can get our costs down, we can meet the challenge of cheap foreign labor, we can be competitive in price with foreign cotton and rayon.

In the long run, technology is our only real hope for discouraging foreign cotton and rayon production.

Meanwhile, the government's new program to sell U.S. cotton at lower prices

## Dates of Technical Meetings Set

National Cotton Council has announced the dates for two technical meetings which it sponsors. The Chemical Finishing Conference will be held at Hotel Statler in Washington, D. C., Oct. 3-4, 1956. The Cotton Research Clinic will be held at General Oglethorpe Hotel, Savannah, Ga., Feb. 27-March 1, 1957.

overseas should be invaluable in helping us through the present emergency situation. This is a program we urgently need. It is what we need right now to keep from being swept completely out of the export picture. It is what we need right now to help us regain our historical share of the world market. And of equal importance it gives us time to get back on our feet—time to get our costs down—time to do the things we must do if the U.S. cotton industry is to survive.

But we know that our industry can't build a sound future for itself if it depends permanently on a continuation of the government's export program. If the U.S. cotton industry is to survive—if it is to realize the kind of bright future it is possible to attain—it must get set to meet its competitors head-on at home and abroad. It must, through research, reduce costs to meet price competition and keep cotton a profitable business; it must, through research in breeding and utilization, move cotton forward on the quality front; it must, through promotion, see that consumers are sold on the superior qualities of cotton products.

This is the way forward for cotton. It is the only way forward for cotton. It is the only way by which American cotton can survive as a commodity with a strong place in the economy of this nation.

The forces we have considered are pulling American cotton toward the dynamic, progressive solution to its problems. We have got to have bigger markets. We are going to have them. The situation we face does not permit us to accept a mediocre future. American cotton faces a big future or no future. The forces now at work offer us no real choice except to go forward to a big future.

## Mechanization in Cotton's Future

By E. LEE LANGSFORD, Washington, Agricultural Economist, USDA Agricultural Research Service.

If cotton is to have much of a future, technological progress is destined to play a big part in it. And of course, increased mechanization must be one of the prime movers in this technological progress.

As a starting point for projecting cotton mechanization into the future, let's note a few things that have been happening in the last 25 years. During this period, the number of farms growing cotton has dropped from nearly two million to about 864,000—a decline of nearly 60 percent. For the Belt as a whole, farm population has declined by more than one-third. There are far fewer farms and far fewer people growing cotton. But they have been producing just about as much cotton during the past few years as at the beginning of the 25 year period.

There are two basic reasons why fewer farms and fewer people can produce the same amount of cotton: (1) Man-hours of labor to produce and harvest a bale of cotton have dropped from 260 hours to 108 hours; (2) cotton yields per acre have been increased by more than 80 percent. To an important extent, these changes were brought about

(Continued on Page 32)



## Oklahoma Cotton Winners Shown on Tour

WINNERS of the 1955 Oklahoma 4-H and FFA cotton contest and their coaches are shown here at one of their stops on the recent tour of irrigated cotton areas of the Southwest. The tour was awarded by Oklahoma's Cotton Research Foundation and arranged by Edgar L. McVicker, secretary of the state's crushers' and ginner's associations, who made the trip with the group. Two ginner's, F. M. Jack and Roy Gillin, and Rex Etter, oil mill manager, substituted for coaches on the trip; and other guests included Ralph Dreessen, district director of vocational agriculture; George Stroup, Extension cotton specialist, and Jim Howell, County-Agent-at-Large. This picture was taken when the group stopped to visit Western Cottonoil Co., at Abilene, Texas.

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**NEW** from *Panogen*  
**Drinox®**  
Liquid Insecticide



Now you can treat seed to control wireworms, seed corn maggots, and various other hungry soil insects who are waiting to feast off the seed your customers will be planting this coming season — with a ready-to-use liquid.

DRINOX, the new liquid insecticide, has proved extremely effective in protecting both seed and newly-germinated seedlings from attack by destructive soil-dwelling insects.

Containing 30% *aldrin* (Shell Chemical Corporation's powerful new insecticide) DRINOX has been tested by agricultural colleges and farm users and found effective for the treating of wheat, barley, oats, rye, cotton, sorghum, and corn.

As a custom seed processor, you'll find DRINOX a vast improvement over the dust type insecticides. Because it is a *true* solution (not a slurry), it does not settle out or leave a sediment. It comes ready to use. It requires no mixing and is non-inflammable.

Write or phone your nearest Panogen Distributor about DRINOX today!

... or use handy postage free card at right →

This year, more farmers than ever will want their seed treated by the scientific PANOGEN PROCESS.

There are two reasons ...

**FIRST** ... the huge increase in use of red-tinted, *Panogenized* seed in the past few years has given farmers an opportunity to compare. They've seen the *thicker* stands, *healthier* plants, and extra bushels they receive from *Panogenized* seed as compared to the results they receive from seed treated by old-fashioned or commercially untried materials. *They like PANOGEN seed treatment!*

**SECOND** ... to help promote the important practice of treating seed and boost your treating business, a large advertising campaign, appearing in the nation's leading farm magazines, will explain to your farm customers why it is safer and more profitable to have their seed *Panogenized* with the *only* liquid seed disinfectant widely recommended by Agricultural Colleges and Experiment Stations, coast to coast.

It will pay you to order your supply of liquid PANOGEN early this year, so when your customers ask for *Panogenized* seed treatment, you'll be ready.

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**BUSINESS REPLY CARD**

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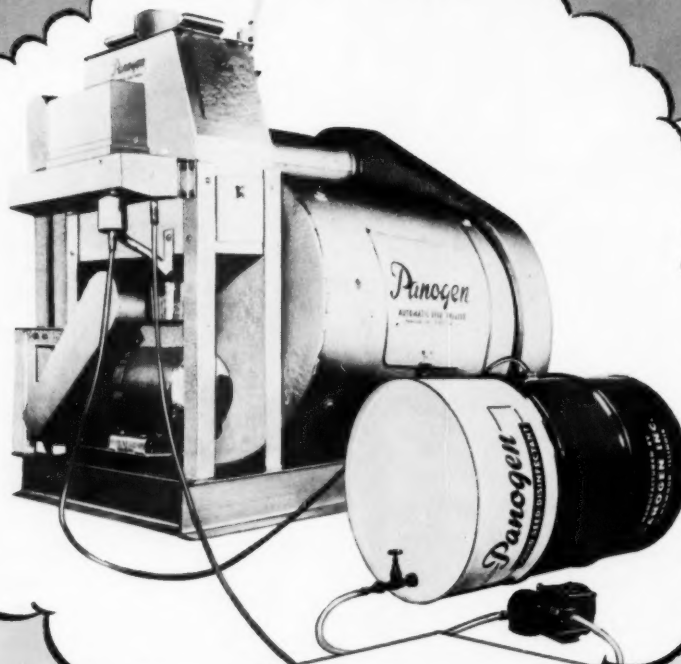
Mr. Kirk McComb

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Time to come out of the dark and the dust of  
old-fashioned  
methods ...



## Treat Seed the MODERN WAY

... with Panogen, the  
Liquid Seed Disinfectant, in  
any and all seed treaters

- Fully automatic Panogen treaters
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- ☐ Send me more information on the modern Panogen Process and the name of my nearest Panogen Distributor.
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### THE MODERN SEED DISINFECTANT

Let PANOGEN make your seed treating easier.

PANOGEN was first to introduce a ready-to-use liquid seed treatment... one that wouldn't freeze, settle out, or corrode metal.

When you treat with PANOGEN you are doing the very best by your customers. They can see their seed is treated by the red coloring, but more important ... PANOGEN treated seed is *properly protected*. No other disinfectant provides a more effective control of seed and soil-borne diseases. This is verified by the fact that despite frequent attempts to imitate it, PANOGEN after 18 years, is still *the only liquid seed disinfectant widely recommended by agricultural colleges and experiment stations, coast to coast, and the Panogenized tag is a symbol of quality.*

### MODERN SEED TREATER

Let the automatic PANOGEN PROCESS make your seed treating still easier.

PANOGEN was also first to introduce a really modern, automatic seed treater. Modifications through the years have perfected PANOGEN Treaters to now give you seed treating at its automatic best. They eliminate all the disadvantages of old-fashioned treating methods and permit you to treat seed properly and adequately without waste. Employees praise the process. With PANOGEN's famous push-button, direct-from-drum method and automatic clean-out, you can treat up to 10,000 bushels without stopping!

In this day of science and modern efficiency, it will pay you to switch to the modern, scientific method of seed treatment ... the

# Panogen<sup>®</sup> Process





### Officers Named by Soybean Association

SHOWN are the new officers of American Soybean Association whose election took place at the annual convention reported Aug. 25 in The Cotton Gin and Oil Mill Press. Left to right are John Sawyer, London, Ohio, newly-elected vice-president; Albert Dimond, Lovington, Ill., re-elected president; and George Strayer, Hudson, Iowa, re-named executive vice-president and secretary-treasurer.

### New Catalog

#### MAGNI-POWER LISTS ITS ENTIRE MAGNET LINE

Magni-Power Co., Wooster, Ohio, has issued new color catalog, No. 156, showing a full permanent magnet line. The introductory pages give a basic analysis of permanent magnetic properties and the importance of engineered applications. The remainder of the book is illustrated with photographs, dimension drawings and charts on the various industrial magnets such as, plates, sweepers, separators, drums and pulleys, grids, troughs and filters. More specialized magnets such as textile, magnetic racks, offsets and adapters, plastic, roller channels, etc., are also shown and described.

A file tab with complete indexing by types of magnets makes the catalog a handy reference source for engineers, purchasing agents and executives concerned with magnetic application. Copies of the catalog will be supplied without charge upon requests to the Magni-Power Co., Dept. 96, Wooster, Ohio, or to The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26.

### • 1957 Cotton Quota, Allotment Set

COTTON ACREAGE ALLOTMENT for 1957 is 17,391,304 acres and the national marketing quota is 11,014,493 bales, USDA has announced. These, in accordance with the law, are the same as in 1956; and must be approved by two-thirds of the cotton farmers in a referendum to be held before Dec. 15.

The following supply situation, under the law, required the Secretary of Agriculture to proclaim more than normal cotton supplies: The total supply of upland cotton for the 1956-57 marketing year is estimated at 27,550,000 bales (running bales or the equivalent). This is 9,870,000 bales above the "normal supply" of 17,680,000 bales. The "normal supply," as defined in the legislation, is the current marketing year's estimated domestic consumption of 9,100,000 bales and exports of 4,500,000 bales, plus a 30-percent reserve of 4,080,000 bales.

The total supply figure of 27,550,000

bales includes an Aug. 1, 1956, carry-over of 14,100,000 bales, a 1956 crop (August estimate) of 13,400,000 bales, and estimated imports of 50,000 bales.

The national acreage allotment for 1957-crop upland cotton will be apportioned to states, the state allotments to counties, and the county allotments to farms. Individual farm acreage allotments will be made available to producers prior to the referendum.

### Argentine Oilseeds Crop

The quantity of cottonseed available for crushing in Argentina this season is now expected to be no more than 220,000 short tons, instead of the earlier estimate of 242,000 tons, USDA says.

Continuous heavy rains have hampered the cotton harvest.

### • Buckeye Forms New Foreign Division

A NEW EUROPEAN DIVISION has been formed by Buckeye Cellulose Corp. to handle sales of dissolving wood and cotton linter pulp, it is announced by C. B. Metz, vice-president in charge of sales.

The new European division, to be called the Buckeye Cellulose Division of Procter & Gamble Belge S. A., will be affiliated with the Belgian company and will use facilities already established by P&G in Brussels. Manager of the division will be Raoul Cambier, former director and still a member of the board of directors of the Compagnie Commerciale des Celluloses, Brussels, Belgium.

Both the technical and commercial representatives of the new division have been trained at Buckeye's American research and production facilities.

"This staff, familiar with both Buckeye's U.S. research activities and with the processes of the company's European customers, will be able to offer prompt and helpful service on dissolving pulp use," Metz said.

"A close liaison of personnel and information between our European offices and our U.S. laboratories, will be maintained," he added. "This will enable us to pass on to our customers quickly the benefits of technological advances in pulp qualities and in the various pulp consuming processes."

The company's dissolving pulp sales were formerly handled by the Compagnie Commerciale des Celluloses which will continue to represent the Buckeye Cellulose Corp. in the European sales of its wood pulps and bleached cotton linters pulp used in papermaking.

■ DR. DICK M. BASSETT, formerly in New Jersey, has joined the U.S. Cotton Field Station staff at Shafter, Calif., for cotton fertilization studies, financed by a grant from California Planting Cotton Seed Distributors.



JESSE R. HAMLETT



R. R. HAIRE

### Hamlett and Haire To Represent Anderson

THE V. D. ANDERSON CO. Division of International Basic Economy Corp., manufacturers of expellers and supplementary vegetable oil milling equipment, have announced the appointment of Jesse R. Hamlett and R. R. Haire of Memphis as exclusive sales representatives with a parts warehouse. They will serve oil millers in Mississippi, Arkansas, Louisiana and Western Tennessee.

## U.S. Processing Capacity Is Ample for Soybean Crop

Processing capacity in the U.S. is ample to handle the record 1956 soybean crop, an analysis by the National Soybean Processors' Association indicates.

Association members are estimated to have facilities to handle 310 million bushels, non-members can handle 45 to 50 million bushels, and current expansion will handle 25 million bushels—a total of 385 million bushels. Cottonseed and flaxseed mills in soybean areas are listed as able to handle 20 to 25 million bushels, making a grand total capacity to handle about 400 million bushels of beans.

Mills are expected to have 320 to 325

million bushels of soybeans available for processing, out of the total supply of 443 million.

## In-transit Cotton Fires Cause Heavy Damage

In-transit cotton fires reported by railroads during the period Aug. 1, 1955-July 31, 1956, resulted in damage amounting to \$1,423,748, a summary by the National Cotton Council indicates.

Railroads reported 287 fires, with cotton valued at \$1,276,235 lost and \$88,056 damage to railroad property. Friction was reported by the roads to have caused 164 fires, fire-packed bales 12, miscellaneous causes 9 and the cause of 102 fires was undetermined.

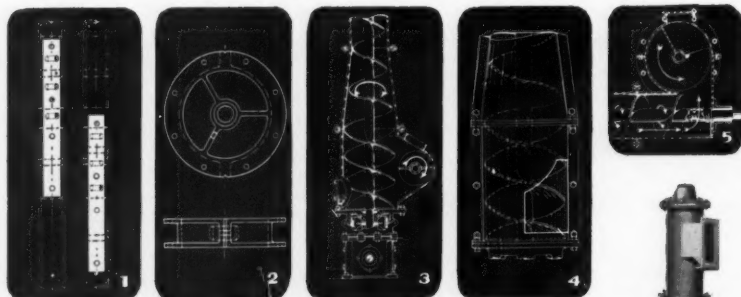
## Retiring After Half Century of Service

WOMEN IN OFFICES were a novelty back in 1903 and the young girl who went to work for Continental Gin Co. at Dallas was the only female in that office.

The men just "tolerated" her, Mrs. Mary Roberts says now, but it must have been more than "toleration" that caused Continental and Mrs. Roberts to continue their association for more than 53 years, until Sept. 1, 1956. On that date, Mrs. Roberts retired from Continental. There is no one left in the Dallas office who was there when she started to work.

She began as a stenographer, working

## 5 features that put "HAMMOND Screw-Lifts" in a class by themselves!



ALL THESE FEATURES ARE EXCLUSIVE!!

### FEATURE NO. 1

**ACCESSABILITY** . . . "Hammond Screw-Lifts" are manufactured with slip-couplings between each length of conveyor permitting quick removal of conveyor for repair or replacement.

### FEATURE NO. 2

**SPLIT STABILIZER BEARINGS** . . . A companion feature to split couplings permitting immediate access and elimination of whip and vibration in vertical unit, also assuring quiet operation loaded or empty.

Is it any wonder "Hammond Screw-Lifts" with these patented features are preferred by thousands of users?

### FEATURE NO. 3

**NO CHOKING** . . . "Hammond Screw-Lift" design incorporates a relief chamber at the transfer point having a 130% greater capacity eliminating pressure and degradation between horizontal and vertical conveying mediums.

### FEATURE NO. 4

**LOADING APERTURE** . . . "Hammond Screw-Lifts" use only 90° of the circle. Loading is always in the direction of the vertical screw rotation. This permits free access from horizontal to vertical flights with controlled capacity.

### FEATURE NO. 5

**FEEDER CONTROL** . . . With a "Hammond Screw-Lift" the movement of material from the horizontal feeder or conveyor is coordinated with the specified capacity of the lift. No build up of volume is permitted eliminating possibility of clogging.

If you have a material handling problem involving vertical elevating plus horizontal distribution and reclamation investigate "Hammond Screw-Lifts." They'll convey your material from receiving point to storage . . . reclaim and feed to processing or packaging equipment without manual handling. Little space is required because the material travels in a tube of 4, 6, 9 or 12 in. diameter. No return strands to use up space. The operation is automatic—fast—clean—totally enclosed. Capacities from 75 to 3000 cu. ft. per hour. Installation is simple—all units are preassembled and tested before shipment. Write for Bulletin M-500-2.



MRS. MARY ROBERTS

for the late Ennis Munger, but Mrs. Roberts has been the receptionist and switchboard operator for many years and is known to hundreds of ginners who have visited Continental's Dallas plant.

Mrs. Roberts worked two years for The Dallas Times Herald before she joined the staff of Continental.

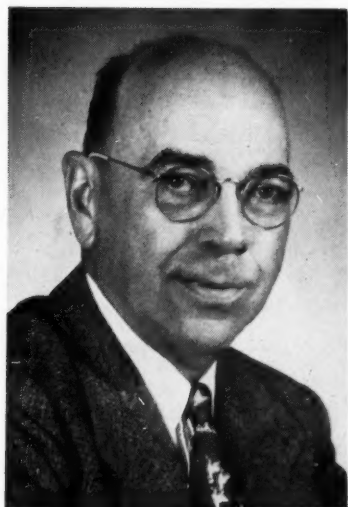
She has her own home at 9402 Peninsula in the Lake Highlands area in Dallas and says she's "just going to hibernate there", although her daughter is trying to persuade her to come to live in Florida.

Continental officials are high in their praise of the faithful service that Mrs. Roberts has rendered for more than half a century, and believe that she may have set a record for length of service among women in the gin machinery industry.

## Japanese Soybean Duties May Curtail Imports

Japan expects to resume collection of a 10 percent import duty on soybeans on Oct. 1, and this may cause a shift to imports of other oilseeds, USDA reports. The soybean import tax has been suspended for four years.

Soybean imports by Japan in 1955 totaled 29 million bushels, of which 21 million came from the U.S. Other oilseed imports were 360,000 tons of which only 30,000 tons (mostly flaxseed) came from the U.S.



## The Effect of Price on Expansion of Cotton's Markets

**Eugene Hayes, California cotton leader, stresses that price, research and promotion must work together in behalf of expanded cotton markets.**

•

*Eugene Hayes is a prominent cotton grower, Madera County, Calif.; Chairman, Cotton Department, Member of Board, California Farm Bureau; Member Advisory Board, California Planting Cotton Seed Distributors; Member Cotton Research Advisory Committee, Shafter Experiment Station; Member Utilization Research Committee, National Cotton Council; Director Western Cotton Growers Association; closely associated with development of Southwest Five State Cotton Growers Association.*

Recent studies by the National Cotton Council show that cotton meets its competition through a combination of price, quality and promotion. Adoption of the wrong policy in regard to any one of these three factors will always result in the loss of markets to our competitors. We can be proud of the progress made in quality improvement and in cotton promotion, especially since we have never had sufficient funds available for adequate research or promotion.

But what have we done about price? Rigid high price supports have made it impossible for American cotton to compete freely in the world fiber market. Consequently, we have seen in recent years tremendous increases in the pro-

duction and consumption of both synthetic fibers and foreign cotton.

There is no simple, easy solution to this problem. The Agricultural Act of 1956 seems to be a step in the right direction. The decision to do away with rigid high price supports, and to sell American cotton at competitive prices on the export market should go a long way toward reducing foreign cotton production, increasing the world consumption of cotton in place of synthetics and reducing our surplus. The Soil Bank program offers a way out for growers (especially those with small acreages) whose production costs are high, and should eliminate the necessity for further compulsory acreage cuts.

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**Published in the interest of the American Cotton Industry by  
National Cotton Compress and Cotton Warehouse Association.**



# Ginning for High Quality

THOMAS O. MURCHISON, at Arkansas meeting, says it will take the joint efforts of producers and ginnerers to meet spinners' needs.

**P**RESERVATION of fiber quality is vital to everyone and ginnerers should help to educate farmers to this fact, Thomas O. Murchison, farmer and ginner of Lonoke County, Ark., recently told a meeting of farmers, ginnerers and implement dealers at England, Ark.

Murchison's remarks, of interest to ginnerers and producers anywhere, included the following comments:

"We are all interested in cotton's prosperity, and know the real determining factor in our prosperity is our markets. We must sell cotton products to consumers in the retail outlets. They must be products of the quality consumers want."

Through the operation of your own business, Murchison continued, you are aware that you must make profits to stay in business. "The same thing applies to spinning mills.

"Spinners, to meet competition within their own industry and from competing fibers or products, must operate at maximum efficiency in terms of cost; and, to maintain cotton's competitive position, they must turn out quality products. To do this, they must have quality cotton. Quality must be developed by the seed breeders and preserved through the finished product. We, as ginnerers, play a very important role, and I urge each one of you to realize this. Go back home determined to do a better job.

"I think that most cotton ginnerers, considering prevailing conditions, have done an outstanding job of preserving fiber quality and, at the same time, satisfying customers. We are all aware of the mechanization trends and the impact that has been felt by ginnerers as a result. At this point praise for the gin manufacturers is due. They have done an excellent job in helping with this important problem. The condition of seed cotton arriving at the gin in recent years has created problems of paramount importance to the entire cotton industry. The reaction of cotton ginnerers to this condition has been most important to the growth of mechanization and to the progress of the cotton industry as a whole.

"To handle the machine — or rough — harvested cotton of varying degrees of moisture and trash content, cotton gin manufacturers, USDA Laboratories, and the ginnerers themselves have developed and installed equipment to process this rough cotton and preserve quality of the lint. This has required heavy additional investments and has increased the scope of the ginning operation considerably."

Murchison pointed out that ginnerers are hiring more capable and expensive personnel to operate their equipment, and, as evidenced by the attendance at the gin schools across the Belt, they are eager to improve their knowledge of gin operation. "By so doing, they are preserving lint quality and producer income, making mechanization progress and market expansion possible. There is no doubt, concerning the key position of the cotton ginner in the mechanization program."

Granting that there have been complaints regarding over-drying and over-machining of cotton, and that tests have proved that too much heat and too much

machining can injure cotton, Murchison said that he did not have information regarding the extent of this.

"When this happens," he said, "we all suffer. However, there are problems which make it difficult to prevent these malpractices.

"Farmers patronizing the same gin use different harvesting methods, have individual picker or stripper operators, follow different cultural practices, some defoliate, some don't, etc. All of these variations in one area make a tough job tougher. As indicated, the big problem is the extreme variation in the condition of seed cotton received at the gin within a short period of time. Certainly, to prevent fiber damage, these cottons of varied trash and moisture contents should not be processed alike.

"Therefore, some ginnerers are taking the lead, working with their producers, in urging proper cultural and harvesting methods to provide a more uniform raw product arriving at the gin. They are also educating producers on the advantages of grouping and ginning cottons of similar trash and moisture content together. Ginnerers simply cannot adjust their operation to fit the needs of each



## About the Author

THOMAS O. MURCHISON has been farming and ginning for 20 years; and in 1948, he, his father and brother-in-law, W. B. Hunter, built a modern gin at Coy, Ark., where Thomas Murchison is general manager of Frank Murchison & Co., gin and elevator.

He was born Friday, Feb. 13, 1914, and has lived at Coy, within a mile of his birthplace, all of his life. A graduate of England High School, he also attended Hendrix College and the University of Arkansas. He and Mrs. Murchison have two sons: Tommy, Jr., a senior at Columbia Military Academy, Columbia, Tenn., and Rodger, 10 years old.

Murchison is active in civic affairs, having been chairman of the Lonoke County AAA Committee, president of the England Board of Education, a director in the Bank of England, a director in the Arkansas-Missouri Ginnerers' Association, chairman of the board of deacons of the First Baptist Church of Coy, and an Adult Men's Sunday School teacher, a member of the Little Rock Consistory, and a Mason.

## Arizona Lint Yields Set New Records

New records for high yields of cotton seem certain to be set in Arizona this season, reports from various parts of the state indicate; and E. S. McSweeney, executive of Arizona Cotton Growers' Association, has joked that anyone failing to make three bales to the acre will be dropped from membership. In Maricopa County, for example, Assistant County Agent Jim Carter expects an average of 1,200 pounds per acre, and some fields already have yielded one and one-half bales per acre, with picking still in full swing. Present prospects indicate a state average yield of around four bales per acre.

individual bale. Quality can best be preserved by use of only that equipment necessary to properly gin cotton of any given condition. We have made much progress, but we must continue to improve our ability to preserve quality throughout all phases of cotton's production, harvesting, processing, and spinning.

"Ginnerers that operate in a competitive area should work together to improve the attitude and knowledge of the producers concerning cultural and harvesting practices that affect ginning and, accordingly, fiber quality. They can do much to improve the reputation of cotton produced in an area. The reputation of cotton from a particular area is becoming increasingly important, as mills are using fiber tests to control their operation. The confidence they have in fiber quality of cotton from a particular area will have considerable influence on the basis offered for the cotton in that area.

"There is one point I would like to emphasize. This is that we, as ginnerers, must try to educate our producer customers to the fact that preservation of fiber quality is a must for all of us. We all know that ginnerers are, in most cases, respected leaders in their respective communities and have tremendous influence. I urge each of you ginnerers to talk to your customers in terms of fiber quality, as a job that we must face together and mutually handle. Tell them also that the job that you do for them as their ginner in ginning their cotton largely depends on the condition of the seed cotton they send you to gin."

This field was mechanically harvested...  
and yielded **2½ Bales** per acre!



Breeder's Registered  
**DELTAPINE 15**

- Medium-early Maturing  
Heavy Yielding
- High Lint Percent (38 % to 40 %)
  - Easy Picking—Hand or Machine
  - 1 1/16 to 1 3/32 Inch Staple



Breeder's Registered  
**D & PL-FOX**

- Fast Fruiting • Early Maturing
- Excellent for Machine Harvesting
- Moderately High Lint Percent (34 % to 38 %)
- 1 1/16 to 1 3/32 Inch Staple



Breeder's Registered  
**DELTAPINE STAPLE**

- A new variety bred to give the highest Lint Percentage of any cotton of equal staple length. (34 % to 36 %)
- 1 1/8 Inch Staple.

A successful cotton farmer of Mounds, Louisiana, E. C. Woodyear, is a man who believes in the full use of mechanized farming methods — and equally important, the use of good planting seed — as a means of increasing his productivity of labor.

This field of cotton was planted in 1955 to Deltapine 15, the big brother in the family of fine cottons bred by Delta and Pine Land Company. From the 150 acres represented in this photograph, Mr. Woodyear actually harvested 375 bales of cotton — an average of 2½ bales of top-quality cotton per acre!

Behind these Deltapine Cottons are many years of research aimed at developing varieties from which

the farmer can expect to produce premium quality cotton under a variety of farming conditions and practices. Scientists at Delta and Pine Land Company have succeeded in matching the rapid advancements made in the cotton industry; they have developed cottons that are heavy yielders, adaptable for belt-wide production... cottons that are in highest demand by cotton manufacturers... cottons that can be profitably produced, with no sacrifice in quality, because of their high degree of adaptation to mechanized farming methods.

Plant Breeders Registered Deltapine 15, D&PL-Fox or Deltapine Staple... the cottons that are bred to make labor more productive and investments more profitable.

**BREEDERS OF THE BELT'S BEST COTTONS**

**DELTA & PINE LAND CO.**  
SCOTT, MISSISSIPPI • BROWNSVILLE, TEXAS

## as viewed from The "PRESS" Box

### • Sleep Cooler on Cotton

YOU SLEEP COOLER on cotton cushioning, advertisements appearing in current issues of Ladies' Home Journal and McCall's magazines point out. Sponsored by the National Cotton Batting Institute and the National Cotton Council, the advertising is part of a cooperative program stressing the value of cotton batting for many different purposes. This is one of the National Cotton Council

programs of special, direct value to cotton oil mills and gins.

### • High in Oil Content

PARROTT COTTON, the variety developed at Oklahoma Experiment Station and named for the late "Polly" Parrott, leading plant breeder, had the highest oil content of cottonseed in most Oklahoma tests last year. All major varieties grown in the state were tested.

### • A Service to Cotton

COTTON MECHANIZATION information is presented throughout this issue, which reports in detail the 1956 Belt-wide Cotton Mechanization Conference held in Atlanta and at Georgia Agricultural Experiment Station, Experiment, Ga. The Conference is sponsored by the National Cotton Council, with the cooperation of the Farm Equipment Institution, USDA, land-grant colleges, vocational agriculture, farm organizations, and others. This represents a signal contribution to cotton's progress, and has done much to speed the mechanization of cotton production in the 10 years that these meetings have been held. Ginners and crushers, as well as producers, will find in the authoritative discussions at this Conference much worthwhile information.

### • New Textile Fiber

CRESLAN, a new acrylic textile fiber, will be produced by American Cyanamid Co. at a plant to be built near Pensacola, Fla. The plant will employ about 350 persons and produce 27 million pounds of staple and tow. Creslan is designed for use in jersey fabrics, simulated fur fabrics, suitings and overcoatings and certain industrial and non-woven fabrics.

### • Children's Cottons

CHILDREN'S COTTONS were featured nationally Aug. 30 on the Will Rogers Show over Columbia Television Network, the National Cotton Council reports.

### • Need More Research

MORE RESEARCH MONEY should be spent by the textile and apparel industry, a business financing leader believes. Walter M. Kelly, president of Commercial Factors Corp., cited surveys showing that the textile and apparel industry was spending only four-tenths of one percent of its sales take on research, whereas the all-industries average was nearly one percent of sales. He noted that the electrical equipment industry was spending 21 percent of sales on research; the aircraft industry, 20½ percent, and the chemicals industry, 10 percent.

### • Poison—Be Careful

PHOSPHATE POISONS are proving effective for cotton pests, and will be used more next season; but those handling them are advised to be extra careful about their toxicity. Periodic blood tests are recommended for those using the phosphates regularly, and Mississippi Aeronautic Commission has made available blood test kits for the purpose. Some duster pilots wonder if these insecticides can have caused the high percentage of crashes this season.

### • To Aid Industrial Uses

FIRST MEETING of the Commission on Industrial Use of Agricultural Products has been held in Washington. Chairman J. Leroy Welsh has invited research organizations and others to submit suggestions for expanding the industrial use of crops. Information may be sent to Rooms 316-19, East Wing, U. S. Department of Agriculture, Washington. Two members of the commission widely known in the cotton industry are Dr. C. R. Sayre, president, Delta and Pine Land Co., Scott, Miss., and Dean Frank J. Welch of the University of Kentucky.



*Rugged, Shot-blast Tests Indicate...*

## RUBBER-LINED GIN ELBOWS OUTLAST GALVANIZED "L's"

# 9 to 1!



In a specially-designed cabinet, 20-gauge, 8" elbows are shot-blasted under conditions far more severe than actual operating wear. Size G-25 crushed steel grit is blown into elbows at a velocity of 1660 feet per second... greater than the muzzle velocity of the most powerful rifle!



A.      B.

After only 12 minutes blasting time, holes appeared in unlined elbow "A". Elbow "B", lined with ¼" rubber, was exposed for 17½ minutes without visible signs of wear. Calibration indicated only 1/32" average abrasion.

Up to 9 times longer service life... and rubber is the answer! Hundreds of gin operators throughout the Southwest have already saved time and money with Abrasion & Corrosion rubber-lined elbows. Now, the results of recent shot-blast tests give undeniable proof that you, too, can cut downtime to a minimum by installing A & C rubber-lined "L's".

Worn-out fan scrolls, too, even if full of holes, can actually be made better than new with A & C rubber lining! They will outlast new scrolls by many times and can be used in-

definitely if the lining is replaced as it wears out.

It will pay you to check into A & C rubber linings right away. For complete information, see your nearest dealer or write to:





## Japanese Planning Greater Manmade Fiber Increase

Japan's textile goals, recently announced for the next eight years, call for a much larger increase in synthetics than in cotton yarns. In 1956, the Japanese production of four manmade yarns—rayon, spun rayon, vinylon, and nylon—is expected to be about 936 million pounds or 23 million pounds less than production of cotton yarns. By 1963, however, planned production of these four manmade products calls for 1.3 million pounds, exceeding by 400 million pounds the cotton yarn production goal of 989 million pounds.

## • Toler and Son Form Brokerage Firm

H. O. TOLER and his son, Hart Toler, have formed their own brokerage firm at 518 Cotton Exchange Building, Memphis. Known as H. O. Toler, Broker, the organization will deal in cash cottonseed and soybean products. The father has been in the cottonseed products business for many years, while the son recently was a radio announcer in Oklahoma City.



## Is This a Record?

CHARLIE GUTHRIE has been attending meetings of the Texas Cottonseed Crushers' Association for 53 years, and hasn't missed more than half a dozen of them, which probably sets a record. Known as "Charlie" to friends throughout the industry, he has been the Texas-Oklahoma representative of Belton Bagging Co. for the past 17 years. He was born in Paris, Texas, Feb. 23, 1876. He started buying cottonseed at Paris for the Honey Grove Cotton Oil Co. when 17 years of age, then went with Oriental Oil Co. at Fort Worth in 1903. He attended his first Texas Convention that year at the Tremont Hotel in Galveston. Charlie has known all of the presidents of Texas crushers since Jo W. Allison, and most of the industry's leaders in Oklahoma, too, and he was present when Texas Cotton Ginners' Association was organized. Still very active, he looks forward to next year's conventions and the opportunity of visiting with many friends.

## • W. D. Jones, Mill Leader, Retires

WILLIAM McDONALD JONES retired Aug. 1 and was succeeded as manager of Palmetto Oil Co., Bishopville, S.C., by Richard D. Smith, who has been with the firm since 1934.

Jones, who has been at Bishopville since 1923, has been active in church and civic affairs, as well as in programs of the cottonseed crushing industry. He was president of South Carolina Cotton Seed Crushers' Association in 1955-56.

Born in Lancaster on Oct. 16, 1888, Jones finished grade school there. He "studied bookkeeping the hard way" while working for several mercantile companies in Lancaster. He moved to

Timmonsville where he took up work as cashier of the Timmonsville Oil Mill on Jan. 14, 1914. He became traveling man for the Hartsville Oil Mill in July, 1922. On Sept. 8, 1923, he became the manager of the Palmetto Oil Co. in Bishopville.

Jones is an elder in the Presbyterian Church, a charter member of the Rotary Club and a past president, and served during World War II as a member of the Lee County Selective Service Board and as chairman of War Bond sales.

Mrs. Jones is the former Miss Louise Taylor, of Lancaster.

The new mill manager became traveling representative of the firm in 1935. Smith was made assistant manager in 1943 and served in that position until elevated to the managership upon Jones' retirement.

# Want a Nice Year 'Round Profit...?

## Install KELLY DUPLEX feed mill equipment



**SCREW ELEVATOR**

Custom made to handle your particular conveying problem.

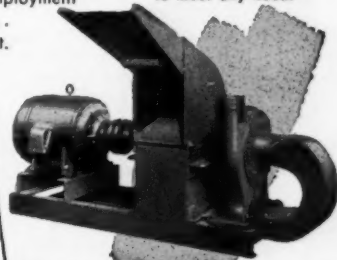
With grain becoming increasingly more important in the agricultural economy of the South, forward-looking cotton ginners have already adapted their operations to include Kelly Duplex grain handling and processing equipment. They've found that this equipment, designed and built for top efficiency, low maintenance and long life, is able to give them steady, year 'round business and employment... greatly increased volume... and, above all, a GOOD profit. It can do the same for you!

Let us help you...  
plan your program by  
supplying advice and full  
details on machinery  
**Mail the Coupon!**



**VERTICAL FEED MIXER**

Available in 6 sizes  
½ to 5 ton capacity—  
to meet any need.



**MODEL "M" HAMMERMILL**

with direct connected motor

**The Duplex Mill & Manufacturing Company**  
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Yes, I'm interested in planning a feed mill program. Without obligation, please send me full details on the machines checked.

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|--|---|
| <input type="checkbox"/> Vertical Feed Mixer       | <input type="checkbox"/> Model "M" Hammermill   |
| <input type="checkbox"/> Vertical Screw Elevator   | <input type="checkbox"/> Model "S" Hammermill   |
| <input type="checkbox"/> Molasses Mixer            | <input type="checkbox"/> Electric Truck Hoist   |
| <input type="checkbox"/> Cob Crusher               | <input type="checkbox"/> Corn Scalper           |
| <input type="checkbox"/> Corn Cutter and Grader    | <input type="checkbox"/> Chain Drag             |
| <input type="checkbox"/> Corn Sheller with Blowers | <input type="checkbox"/> Attrition Mill Blower  |
| <input type="checkbox"/> Regular Corn Sheller      | <input type="checkbox"/> Corn Crusher-Regulator |
| <input type="checkbox"/> Pitless Corn Sheller      | <input type="checkbox"/> Grain Feeder           |
| <input type="checkbox"/> Magnetic Separator        | <input type="checkbox"/> Grain Blower           |
| <input type="checkbox"/> Forced Air Carloader      | <input type="checkbox"/> Complete Line Catalog  |

## Nassau To Be Site For Convention

The annual convention of the Cotton Manufacturers' Association of Georgia will be held at the Emerald Beach Hotel, Nassau, Bahamas, May 1-4, 1957, as announced by Henry McD. Tichenor, president.

Pan American World Airways System will operate special "airlifts" from Atlanta to Nassau and return, to transport the majority of the convention delegates to the island resort.

## Feed Brokerage Firm

Luke Heard, Will Kinard and Bill Smith have formed a new feed products brokerage firm at 3240 Peachtree Road Building, Room 210, Atlanta. All three have been associated with the feed industry for a number of years.

## Oil Chemists Will Meet in Chicago

THE ANNUAL fall meeting of the American Oil Chemists' Society will be held at the Sherman Hotel, Chicago, Sept. 24-25. A. F. Kapecki of Wurster and Sanger, Inc. and C. W. Hoerr of Armour and Co. are co-chairmen, with A. V. Graci, Jr., also of Wurster and Sanger, as chairman of exhibits.

Nearly 70 papers will be presented in concurrent sessions of the meeting. Major topics will include oil modification, analytical work, safety, nutrition, processing, and synthetic detergents.

## History of Weimar Mill Goes Back to 1867

■ EMIL HILLJE, 6721 Broadway, San Antonio, is a member of a pioneer oil milling family who, although retired for a number of years, reads The Cotton Gin and Oil Mill Press and is interested in news of the industry. The former president of Texas Cottonseed Crushers' Association writes that he "is 75 years young," having been born Sept. 29, 1881.

His letter points out that the present mill at Weimar, Texas, is one of the oldest oil mills in the nation, although it has moved from the first location. In 1867, J. C. Baumgarten of Schulenburg, Texas, built the state's first oil mill at High Hill (Fayette County) for Emil Hillje's grandfather. In 1875, this mill was moved to Weimar, where it has been in operation since. Edgar Seifert and F. J. Wendel are the present owners. The Hillje family at various times operated mills at Hallettsville and Brady, and two in San Antonio.

■ J. D. MARION, Lubbock cotton merchant, and four farmers have bought half interest in Simmons-Henry Gin at New Deal, Texas.

## New Promotions Made By A. E. Staley Co.

Expansion of the refined oil sales department of the A. E. Staley Manufacturing Co., Decatur, Ill., has occasioned the promotion of three men in the company.

Russell Bentley, who has been district manager in charge of oil sales in San Francisco, is being sent to New York. He will be in charge of refined oil sales in the entire metropolitan area.

Replacing Bentley in San Francisco is Robert D. Stain, who is being promoted from a position in the oil sales office in Decatur.

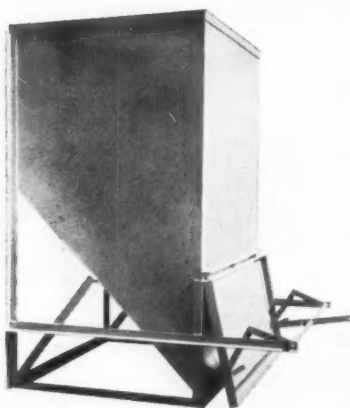
Sam D. Roller, who has been senior clerk in Staley's crude oil sales department, takes over Stain's former position.

## Story Heads Cotton Producers' Group

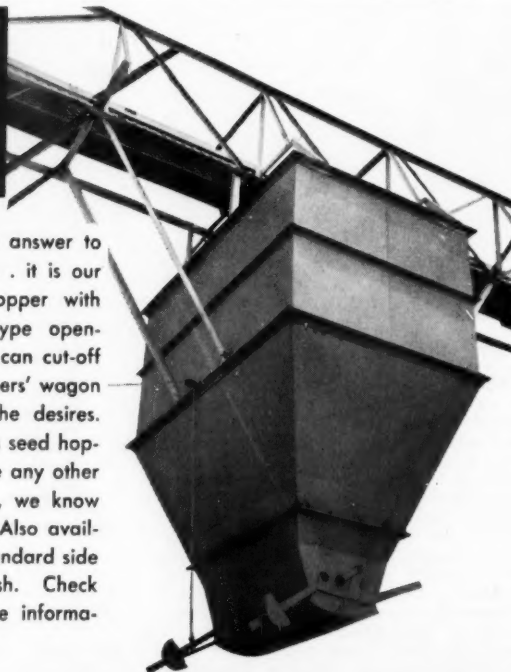
A. L. STORY, Charleston, Mo., was elected president of American Cotton Producer Associates at the annual meeting in Memphis, Aug. 29, at which the organization urged continuance of the cotton export program until the surplus is reduced to a reasonable level. The group also endorsed efforts to impose quotas on textile imports and the labeling of fabrics to show fiber content.

Attending the meeting were representatives from the Delta Council, the Agricultural Council of Arkansas, the Louisiana Delta Council, the Missouri Cotton Producers' Association and the Tennessee Agricultural Council.

## SCISSOR-TYPE OPENING ANSWER TO SEED HOPPER PROBLEMS!



Yes, Ginners, here is your answer to Seed Hopper problems . . . it is our 5-Bale Customer Seed Hopper with center discharge, scissor-type opening. With this hopper you can cut-off the loading of your customers' wagon for any amount of seed he desires. Ginners who have used this seed hopper say they would not use any other kind. Once you've used it, we know you'll say the same thing. Also available is the 2 and 3 Bale standard side opening hopper if you wish. Check with us today for complete information.



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LUBBOCK, TEXAS

## • Brown Hays Retires, Roberts Appointed

BROWN HAYS, Dallas, who has been sales manager in the Dallas district for gin machinery for the Murray Co. of Texas, retired on Sept. 1 and was succeeded by E. T. (Gene) Roberts.

Hays, who has been with Murray for 20 years, has a place near Medina Lake in Southwest Texas and plans to do a lot of fishing there. He is widely known throughout the ginning industry, as is his successor, Roberts, who has been with the firm in the Bakersfield, Calif., area recently. Earlier, Roberts represented Murray in the Vernon area of Texas and in Oklahoma.

## 1956 Farm Income Above Last Half of 1955

Farmers' realized net income in the first half of 1956 was at an annual rate of approximately \$11.6 billion. This was about the same as in the identical period of 1955, and a half billion dollars higher than the rate during the second half of 1955, says USDA.

Cash receipts from farm marketings in the first half of 1956 were almost the same as in the like period of 1955, as somewhat lower average prices of farm products were about offset by an increase in the volume of sales.

According to USDA, production expenses as well as gross income showed little change from the first half of 1955 to the same period of 1956. Prices paid for the farm-supplied items of feed, seed and feeder livestock all averaged considerably lower than in 1955. This was largely offset by increases in property, wage rates and interest payments, as well as higher prices for some manufactured items.

Half of U. S. farmers' 1955 cash receipts for farm commodities came from the sale of five major commodities—cattle, wholesale milk, hogs, cotton and wheat. Cattle and calves accounted for 16.7 percent, wholesale milk 12.2 percent, hogs 9.9 percent, cotton 9 percent, and wheat 5.7 percent. Thirty years ago cotton receipts led all the rest, cattle was second, hogs third as in 1955, wheat fourth, and wholesale milk fifth.

### New Bulletin

#### "COTTON PRODUCTION AND DISTRIBUTION" ISSUED

The annual publication, "Cotton Production and Distribution" has been issued by the U. S. Department of Commerce for the season ended July 31, 1955. This is the standard source of statistics on cotton ginnings, cottonseed crushed, cottonseed products and related data.

Copies may be purchased for 25 cents each by requesting U. S. Bureau of Census Bulletin 192 from the Government Printing Office, Washington 25.

## Soybean Tests Toured

California soybean variety tests from Sacramento southward through the San Joaquin Valley were toured Aug. 28-31, with the final stop at the U.S. Cotton Field Station, Shafter, to inspect the regional nursery.



W. L. SMITH



EARL HOBBS

THREE OFFICERS re-elected by Plains Ginners' Association at the annual meeting in Lubbock, Sept. 1, shown here are W. L. Smith of Ralls, president; Earl Hobbs of New Deal, vice-president; and Dixon White of Lubbock, secretary.

### At Lubbock Meeting

## Officers Re-elected By Plains Ginners

■ GRIER stresses opportunity for quality cotton that is competitively priced in talk.

"With proper promotion, quality cotton, competitively priced, can and I believe will compete for its fair share of the textile business," F.E. Grier, Greenwood, S.C., president of the American Cotton Manufacturers' Institute, told the Plains Ginners' Association Sept. 1 at Lubbock.

Grier was a featured speaker at the annual meeting of the Association, and the final meeting of the season of four districts of Texas Cotton Ginners' Association.

"Hope lies in making production and marketing more efficient, and with the leadership available on the South Plains, I'm sure you will find the answer to these problems in time," Grier concluded.

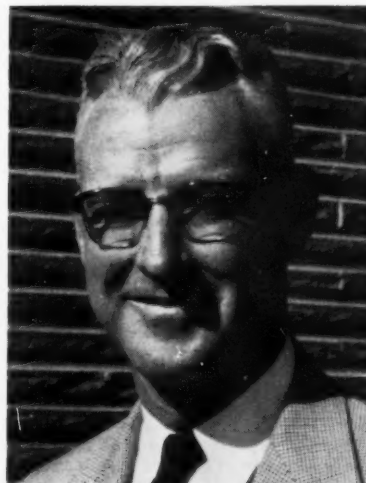
George Pfeiffenberger, executive vice-president of the Plains Cotton Growers, Inc., introduced Grier at a luncheon, held in the Lubbock Hotel.

Earlier the Plains Ginners' Association conducted its annual business meeting in the hotel ballroom.

Nine directors were elected for the 1956-57 year. These were Herman Chesshir, Brownfield; Orville Bailey, Roundup; Earl Eeds, Plainview; Roy Forkner, Lubbock; Earl Hobbs, New Deal; Guy Nickels, Farwell; Bill Smith, Ralls; Drew Watkins, Lazbuddie; and Les Wienke, Petersburg.

In a brief meeting after the annual business meeting the directors re-elected W. L. Smith, Ralls, as president, Earl Hobbs, New Deal, as vice-president and Dixon White, Lubbock, as secretary.

At the business session the ginners heard reports from Pfeiffenberger on the Plains Cotton Growers; Ed Bush,



DIXON WHITE

executive vice-president, Texas Ginners' Association, Dallas, on work of the state organization; Jack Blackstock, Anderson, Clayton & Co., Lubbock, on estimated production of the 1956 South Plains crop; L. O. Buchanan, Lubbock cotton classing office, on classing of this year's cotton; and from Horace Etchison, McAllen, president of the Texas Ginners' on additional work of the state group.

Roy Forkner presided at the opening session of the meeting and Earl Hobbs gave the president's report, in the absence of Bill Smith, who was unable to attend because of the illness of Mrs. Smith.

## 98 in Arkansas Contest

Ninety-eight producers are competing in the Arkansas 5-Acre Cotton Contest, William E. Woodall, Extension cotton specialist, reports. Cash awards total \$1,000 in the contest, which is in its first year, and is sponsored by Arkansas Seed Growers' Association and the University of Arkansas.



**BETTER GINNING** is paying off for North Carolina producers when they sell their cotton at such markets as this, at Clinton, N.C.



## The Once "Red Headed Stepchild" Is No More

**A** THREAT of local textile mills to discontinue the use of North Carolina cotton a few years ago sparked the state's Cotton Gin Improvement Program. Much has been accomplished in recent years toward the improvement of ginning in North Carolina. No longer is North Carolina grown cotton the "red headed stepchild" it once was.

Approximately 400 cotton gins are now operating in North Carolina, compared to about 600 10 years ago. Geographic locations of gins are now generally better than in the past, being more conveniently located for both customers and cotton buyers. Services have been improved, due partially to curtailed production of cotton and keen competition among gins. Rarely is a gin yard crowded during the ginning season. This situation is appealing to a customer; however, gin owners and operators would be highly pleased to see their yards crowded more frequently.

The ginning capacity of North Carolina gins is adequate to handle three times, or better, the present production. More specifically, 1.5 million bales could be ginned annually with ease, where at present less than one-third of this volume has been produced for the past several years, less than 350,000 being anticipated for 1956.

Since 1949, North Carolina ginners have invested an average in new plants and major improvements costing in excess of \$10,000 per gin. This is equivalent to \$1.50 for each bale ginned during this period.

North Carolina often is handicapped by unfavorable weather during the harvesting season. Particularly is this



**TYPICAL** of the gins that have invested an average of \$10,000 each in improved equipment is this Cleveland County gin. This is a part of the program which now enables North Carolina to gin qualities needed by mills.

true in the eastern half of the state where late and highly humid growing seasons are prevalent, along with late frosts, all of which contribute to boll rot, insect damage, and late growths of grass. Ginners have not been able completely to overcome such unfavorable conditions, but have made a sincere and conscientious effort to select and install machinery that would best serve this area and existing conditions.

North Carolina generally is now producing a longer staple and finer fiber cotton than formerly. This, too, contributes to the difficulty in cleaning and processing. Advancements worthy of recognition in both skill and quality of ginning now being done are generally the order of the day rather than the exception, as was true not too many years ago. Gin owners and operators now recognize the benefits of good crew

supervision by qualified personnel who know the limitations and capacities of their gin plant and how best to utilize their facilities.

Only a few years ago North Carolina was one of the worst offenders in regard to rough preparation, going as high as 15 percent or 150 bales, of rough cotton per thousand. For several years past this figure has been less than 2 percent, or 20 bales per thousand; and in 1954 only 0.1 percent or one bale per thousand, was rough prepped.

• **Drying Has Helped**—Seed cotton driers or conditioners have probably contributed more toward better ginning in North Carolina than any other recent development in gin machinery. As a result of higher quality ginning, many textile mills now boast of their ability to use every bale of North Carolina grown cotton. Ginners who were reluctant to install drying and other modern facilities gradually lost business, regardless of their arguments relative to better

*(Continued on Page 40)*

**By J. C. FERGUSON**  
Extension Engineering Specialist,  
North Carolina State College



**BOEING 707 JET TRANSPORT.** here shown high above the clouds over Mount Rainier, Washington, can be flown to above 42,000 feet and at speeds more than 500 miles per hour.

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## from our Washington Bureau

by FRED BAILEY

WASHINGTON REPRESENTATIVE

The COTTON GIN and OIL MILL PRESS

• **Indian Deal Significant** — There is much more than meets the eye in that record-breaking export deal now worked out with India. It will mean export of about a half-million bales of cotton worth \$70 million in the next three years, in addition to other commodities.

The sales, to be made for Indian rupees, will greatly ease this country's surplus problem. Considerably more significant is what the deal may mean in the world-wide struggle with communism. India is the most important of all the nations which are as yet uncommitted to either the Soviet East or Free West.

India has a relatively free Western-type government that exerts tremendous influence throughout Asia and Africa. Failure of the Indian economy probably would throw that country, plus many others, into the Soviet sphere.

Food and fiber shortages and lack of wherewithal to develop a modern industry and agriculture are twin difficulties plaguing India. The U.S.-Indian deal strikes at the heart of both problems: First, India will get much needed food and clothing; second, this country will loan most of the rupees from surplus sales back to India for that nation's economic development.

The arrangement will cost this country money. The commodities, going to India for current market value, or about \$300 million, already have cost USDA's Commodity Credit Corporation about twice that figure to buy and store. The U.S. also is to pay about \$50 million in shipping costs.

Such spending, however, officials point out, could be the best investment this country ever made. Economic collapse of India, and Soviet domination there probably would tip the scales of world power to the communist side.

• **Running Scared**—News that the farm "revolt" has fizzled apparently hasn't impressed politicians of either party. They are running hard and scared in rural areas.

Mr. Benson confirmed that he won't be in Washington much between now and election time, because he has "a lot of talk scheduled." Mr. Eisenhower and Mr. Nixon also will bear down hard on the farm issue in coming weeks.

Firing on the farm front will continue loud and long, whether there is a revolt or not. Fact is that Democrats figure their best chances for gains are in the Midwest and South. The Republicans agree and will shore up their defenses in these areas.

Stevenson strategists believe their man this year can win the "solid South" where he lost in 1952 the four states of Texas, Florida, Virginia, and Tennessee. The Midwest went solid for Ike in 1952, but Democrats are counting on two or three states in the area.

Concede the South and just one or two in the Midwest, add the border

states which normally go their way, then toss in a couple of the big ones like New York and Pennsylvania, say the Stevenson men, and they're in.

Most Washington observers disagree with the Democratic calculations. Eisenhower is a favorite to win again, although not by as large a margin as in 1952.

Congress, controlled by the Democrats for the past two years, could go either way, say political analysts. GOP lawmakers this year have the advantage of Ike's coattails. Democrats may have an offsetting advantage in the race for the Senate. Only 15 of them have to run this time to hold their seats in the upper house, while 17 Republican seats are up for grabs.

Democratic loss of Congress would considerably lessen Southern influence on Capitol Hill. In the Senate, for instance, important committee chairmanships that would be lost by Southern Democrats to Northern Republicans include these: The Agriculture Committee now headed by Ellender of Louisiana would go to Aiken of Vermont; Armed Services from Russell of Georgia to Bridges of New Hampshire; Finance from Byrd of Virginia to Martin of Pennsylvania; Banking and Currency from Fullbright of Arkansas to Capehart of Indiana (assuming Capehart wins his race this fall against his Democratic challenger, former Agriculture Secretary Claude Wickard); Government Operations would pass from the present chairman, McClellan of Arkansas, to McCarthy of Wisconsin; Post Office and Civil Service from Johnston of South Carolina to Carlson of Kansas.

• **Things Look Better**—Things are looking better and figure to keep on improving, say the top officials here at USDA. They give you figures to back up their view, such as—

Higher prices for ranchers and farmers in the second half of this year . . .

Soil bank payments this fall of about \$250 million to more than one-half million operators . . .

Wool payments of about \$50 million to sheepmen . . .

It will all add up to a "slightly larger net income than the low figure of 1955," USDA economists forecast. A few months ago they were predicting another decline this year.

Such expectations make better campaign material for the GOP than they had expected to have.

But top hands at USDA are trying hard to keep their enthusiasm about farm gains under control. The upturn, after all, has occurred following four years of steady decline. Or, as Democratic campaigners are putting it to producers, "You've never had it so good since you had it so bad."

Department optimism got at least a minor setback when Aug. 15 USDA price reports showed a three percent

drop from a month earlier in all-commodity prices, including "moderate decline" in cotton. Agriculture Secretary Benson, in a special statement, described the price drops as "largely of a seasonal nature". The Secretary reminded farmers that the department's economists expect grower prices in general "to continue well above last year."

## • Accurate Sampling Needed in 1956

ACCURATE SAMPLING of cotton in the coming season is highly important to help lint keep its markets and to help farmers get the true value of their crop, Frank McClendon, Dallas, USDA Cotton Classing Service, recently pointed out.

Willful mis-sampling is rare, McClendon added, but negligence and lack of supervision or knowledge can be as harmful. Ginners, warehousemen and others can help cotton by making regular and thorough checks with the persons doing the actual sampling to see that the following things are done:

1. At least a three ounce sample is taken from each side of the bale.
2. Be sure that the outside or bagging side of the sample is not trimmed. It should be the classer's responsibility to determine what is superfluous to the sample.
3. Roll tightly with proper identification.
4. Send promptly to the classing office with no intermediate handling.
5. Adequate control is maintained on the cutting of the sample and the actual handling and transportation to the classing office.

## Former Murray Official, Charles Nevitt, Dies

Charles M. Nevitt, who was with the Murray Co. of Texas, Inc., at Dallas for many years and was general sales manager when he retired Jan. 1, 1946, died Sept. 5 at Brandenburg, Ky.

He was born in Brandenburg and attended public school and college in Kentucky, going to Dallas in 1898 to join the Murray organization. He was a member of the Holy Trinity Catholic Church in Dallas.

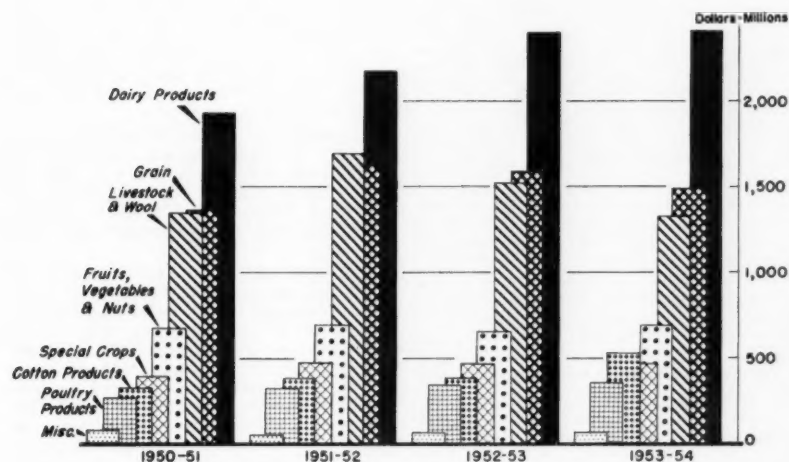
Nevitt is survived by his wife; a son, Charles A. Nevitt of Dallas; a brother, James S. Nevitt of Lubbock; two sister, Mrs. John B. Graves and Mrs. Lena Seger, both of Dallas; and two grandchildren.

## Mink Oil May Be Aid to Beauty

Mink oil may be useful in cosmetics, Dr. John M. Cross of Rutgers College of Pharmacy has announced; but it seems unlikely to be a price or volume competitor with the other fats and oils. A New Jersey mink producer complained that his hands became too soft after handling furs. Tests proved that the oil has an ingredient which may help to soften the skin of the fairer sex, just as the fur is reputed to soften their hearts.



## Net Value of Farm Products Marketed by Cooperatives



TRENDS in cooperative marketing of cotton and other products are shown on this USDA chart. Details on cotton cooperatives are in the accompanying article.

### In New Publication

## Rise in Cooperative Sales Of Cotton Summarized

■ USDA reports net value of cotton and products marketed by 581 organizations rose from \$320,019,000 in 1950-51 to total of \$522,610,000 in 1953-54. Gins total 470.

**N**ET VALUE of cotton and cotton products marketed by cooperatives increased from \$320,019,000 in 1950-51 to \$522,610,000 in 1953-54, a current USDA study reveals.

"Statistics of Farmer Cooperatives, 1953-54" is the title of General Report 23, which gives detailed information on all types of cooperatives. Anne L. Gessner, Farmer Cooperative Service, USDA, is the author. The report gives the following information on cooperatives dealing with cotton:

A total of 581 cooperatives handled cotton and cotton products in 1953-54, with a gross value of almost \$598 million and a net value of almost \$523 million.

Of these associations, 546 were classified as cotton associations primarily engaged in marketing or ginning cotton. There were 520 of these cotton cooperatives classified as local associations and 26 as regional associations. Reports indicated that about three-fourths of the local associations were both ginning and marketing cotton or cotton products. The remaining associations were either marketing, ginning compressing, or storing cotton.

The gross value of cotton and cotton products marketed by the specialized cotton associations amounted to \$591 million in 1953-54. After adjusting for duplication resulting from sales made by regional cotton associations for local associations, the net value amounted to \$516 million.

The value of cotton and cotton products marketed by 541 local cotton associations amounted to \$135 million and the gross volume of 26 regionals was \$456 million. Sales made by 15 regionals for local associations amounted to a little more than \$75 million. Sales of cotton and cotton products by the specialized cotton associations represented 98.8 percent of the total net value of such products marketed by all cooperatives in 1953-54.

Sales of cotton and cotton products by 35 other cooperatives marketing cotton and cotton products as a sideline activity amounted to more than \$6.4 million and represented 1.2 percent of the total net value of cotton and cotton products marketed by all types of cooperatives. The cotton sales of 24 local and three regional farm supply cooperatives accounted for \$5.6 million of the \$6.4 million sales by all other types of associations, with the balance of \$800,000 handled by eight marketing locals. Of these, seven primarily handled grain and one, livestock.

● **\$22 Million for Ginning**—Ginning operations brought a total revenue of almost \$22 million to 470 associations. Specialized cotton associations performed the major portion of these ginning services, with 452 cotton associations reporting ginning revenue of \$21.4 million. Fourteen grain, one livestock, and three farm supply locals accounted for the balance of about \$300,000 of ginning revenue.

● **Sales Higher**—Sales of cotton and cotton products by all types of associations were substantially higher than those reported in 1952-53.

Value of cotton and cotton products marketed by cooperatives, 1950-51 to 1953-54

Period	Gross value	Net value after adjusting for duplication <sup>1</sup>
1950-51	\$349,522,000	\$320,019,000
1951-52	437,626,000	380,375,000
1952-53	420,985,000	375,449,000
1953-54 <sup>2</sup>	597,697,000	522,610,000

<sup>1</sup>This figure does not include sales made by regional cooperatives for local associations.

<sup>2</sup>Preliminary.

Texas outranked all other states in the net value of cotton and cotton products marketed in 1953-54 with \$195 million. Mississippi was second with \$127 million, and California was third with \$68 million. This represented substantial increases for both Texas and Mississippi and a decrease for California compared with their respective net volumes for 1952-53.

● **Figures by States**—By states, the report lists the number of cotton cooperatives operating and the estimated net value of sales as follows:

State	Number	Net Value of Sales
Missouri	4	\$ 1,406,000
North Carolina	1	12,399,000
South Carolina	2	878,000
Georgia	10	7,029,000
Florida	1	130,000
Tennessee	4	9,826,000
Alabama	8	9,819,000
Mississippi	77	127,405,000
Arkansas	39	23,701,000
Louisiana	8	13,554,000
Oklahoma	68	30,510,000
Texas	331	195,445,000
New Mexico	21	18,736,000
Arizona	2	4,230,000
California	23	67,902,000

### New Bulletin

#### BAUER BROS. DESCRIBES FOUR CLASSES OF EQUIPMENT

A four-page Bulletin No. 56 of The Bauer Bros. Co. illustrates and describes four classes of processing equipment:—1. Chip digesters, stock refiners, and Centri-Cleaners for pulp, paper, and board mills; 2. Attrition mills, hammer mills, breakers, crushers, and magnetic separators for feed mills and other industries; 3. Hullers, linters, separators, cleaners, beaters, and defibrators for the oil milling and asbestos industries; 4. Roaster, cooling car and table, grinder and texturizer, blanchers, cleaners and classifiers for the nut, candy, and food industries.

Copies may be obtained from The Bauer Bros. Co., 1701 Sheridan Avenue, Springfield, Ohio; or from The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26.

### Tests of Wilt Resistant Cotton Are Continuing

Several thousand acres in Arizona have been planted this season to a promising new variety of cotton that is wilt resistant, 44-W R. The variety has compared well with the variety 4-42-W R in tests at Safford, Pima County, and Sacaton-Mesa areas, according to E. H. Pressley of Arizona Experiment Station.

Tests this season on land infested with verticillium wilt include the Elroy area, where the disease has done considerable damage the past two years.

## Mechanization Conference

(Continued from Page 18)

by advances in cotton production technology . . . advances that surely have not yet run their full courses.

To be sure, a part of the improvement in yields—perhaps 20 percent came about from what we can simply call land selection—the shift of cotton from the poorer to the higher yielding soils. But the other 80 percent came about because of such factors as increased use of fertilizer . . . more timely and through cultural operations that have come with the increased use of tractor power . . . better insect and disease control . . . increased use of irrigation . . . better planting seed . . . and what we might label a general tightening up of management skills.

Almost half of the reduction in labor requirements is explained by the savings in pre-harvest labor that are associated with the increases in yields. And here, the effects of mechanization can't be easily isolated from the effects of other improvements in technology. But the other half of this reduction in labor requirements can be attributed almost entirely to progress in mechanization.

How far have we come along with cotton mechanization? The picture is a little clearer if we divide the process into three stages:

1. The substitution of tractors for animal power.
2. Developments in grass and weed control.
3. Harvesting.

The substitution of tractors for workstock has run a large part of its course. Only on small farms, primarily in the Southeastern part of the Belt, is this substitution encountering difficulty. Even so, we estimate that 90 percent of the land preparation, 60 percent of the planting, and 80 percent of the cultivation in the Southeast is presently done with tractors. Elsewhere in the Belt, the replacement of workstock with tractors is virtually complete.

Turning now to our second stage in the mechanization process, we find that weed control stands out as the "problem child." Flame cultivators, rotary hoes and weeders, cross-cultivation, mechanical choppers and herbicides have all been used with varying degrees of success. But, by and large, they are only partial answers to the problem. Nowhere in the Belt do we find that any of these new developments offer a dependable and complete alternative to hand methods. There still remains the need for retaining hand labor to cope with weed control, and until this need can be eliminated it will continue to retard the progress of mechanization in other phases of the cotton enterprise.

Turning now to mechanical harvesting, we find one of the most spectacular developments anywhere on the agricultural scene. There are two features of the current situation that I want to point out:

First is the fact that mechanical harvesting has become an important practice from an over-all point of view. There were 19,000 spindle type pickers and 23,000 strippers on cotton farms last season—and they harvested 3.3 million bales, or 23 percent of the total crop.

A second feature of this practice is that it's come along a lot faster in some parts of the Belt than in others. Last season about one-half of the crop in the

three Far Western States was mechanically picked; in Texas and Oklahoma, more than a fifth of the crop was harvested mechanically—mainly with strippers; in the Mississippi Valley States, machines harvested about a fourth of the crop; but in the rest of the Belt, machines harvested only about two percent of the crop.

Without much question, the adoption of improved production techniques . . . with mechanization playing the key role . . . has made cotton more profitable than it would otherwise have been.

In the areas having the greatest advantage in using most, or all, of the newer production practices and techniques, cotton has retained its dominant position, or improved it.

On the other extreme, there are a group of areas where the application of technology has been relatively slow because of environmental and other obstacles. These areas now produce less than half as much cotton as they did 25 years ago.

Then there is an intermediate category of areas, where technology has moved along at what we might call a moderate pace. Areas in this group account for a slightly smaller proportion of the U.S. production than they did 25 years ago.

Here we find some pretty convincing

## ■ Brief . . . and to the Point

JOHN McHANEY, economist of the Texas Extension Service, recently analyzed the reasons for increased production of cotton per acre. He said, in part:

"Production is up because there is no better income-producing enterprise for the Cotton Belt. It is a dependable crop and responsive to improved cultural practices. Acre yields will continue to increase."

evidence of the important role that technology has been playing in the survival of cotton—the role it has played in enabling cotton to withstand competition—competition from other farm enterprises for the use of farm resources and competition from off-farm employment opportunities for labor.

Where farms are large enough to make mechanical harvesting feasible, production costs under mechanized systems are on the order of 10 cents a pound below what they would be with animal power and hand methods—assuming the same yields.

Where size of farm rules out mechanical harvesting, but where tractors can replace workstock—and where rotary hoes, cross-plowing or other mechanical and chemical methods can be used to supplement hand hoeing—costs generally are six to eight cents a pound under what they would be with animal power and hand methods.

Now let's speculate about limits to the further adoption of mechanized practices, given a level of technology pretty much as it stands today.

From the viewpoint of the individual grower, the decision to mechanize cotton production turns on this over-simplified question: What will it cost in comparison with not mechanizing? And the

answer is, in some degree, different for each farm. But we can identify certain of the more important factors that determine what mechanization will cost. First is the matter of the size of the cotton enterprise, and this involves both the number of acres and yield potential of those acres. Second is the topography and character of the land. And third is the technical efficiency of the machine or practice being considered.

Consideration of size is especially important in projecting an expansion of mechanical picking—a practice that is particularly limited by the scale of operation because of the heavy investment represented by present day machines.

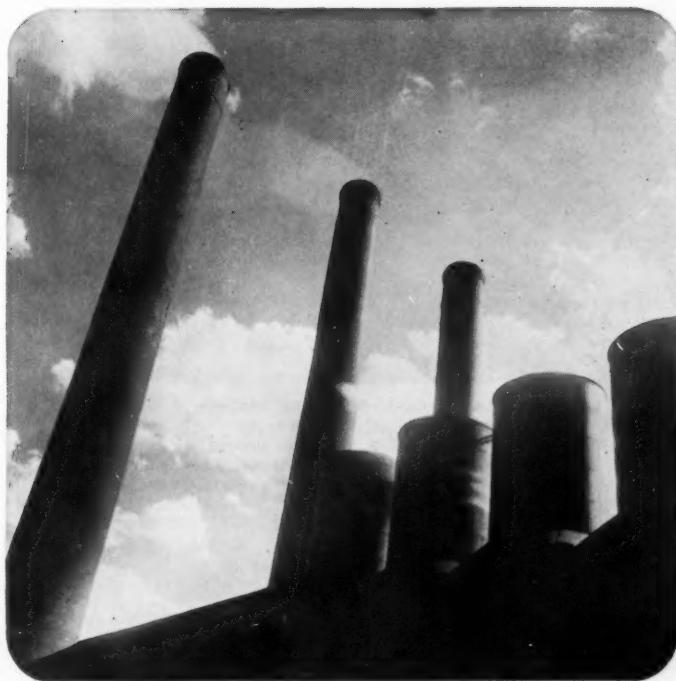
For present spindle-type pickers to offer any attractive advantage over the cost of picking cotton by hand in recent years, it is necessary to harvest at least 90 to 100 bales of fairly high yielding cotton annually. At present, perhaps 30 percent of our total acreage is on farms large enough to meet this requirement. Custom harvesting can probably be expected to add some to this, and there are other possibilities that are also promising.

When you compare mechanical harvesting with hand harvesting the way the grower has to figure it, about 50 percent of the costs that must be charged against mechanical harvesting are accounted for by extra field waste and the price discounts associated with lower grades. There are good possibilities that much of this cost could be eliminated through concentrated efforts to increase the competence of machine operators and through more thorough servicing and maintenance of the machines. Any accomplishments in this direction will tend to push the break-even point further downward. Also, we expect that improvements in the machines will tend to lower the minimum volume that will justify their use, and that yield increasing practices will have a similar effect.

Use of the stripper-type harvester, now limited largely to the short-growing-season areas of West Texas and Oklahoma, may be extended into other parts of the Belt. This depends on the solution to some pretty complicated technical problems associated with the use of defoliant and desiccants.

With the present limits on the feasibility of mechanical harvesting, we have a potential for applying this practice to perhaps a third of the crop. If we can find ways of efficiently eliminating field and grade losses presently associated with the practice, this potential might be raised to somewhere around half the crop. If smaller but equally efficient machines can be developed that would reduce the investment substantially, the potential might well go to two-thirds of the crop.

We must recognize, however, that the labor supply, and wage rates, will have a great deal to do with how well these projects turn out. If the trend in the movement of labor out of cotton production were suddenly accelerated, bringing a sharp rise in wage rates for hand harvesting, this would tend to hasten the adoption of mechanical harvesting, and to lower the volume necessary for making the practice economically feasible. On the other hand, if opportunities for employment outside of agriculture should diminish, the rate of adoption of mechanical harvesting like-



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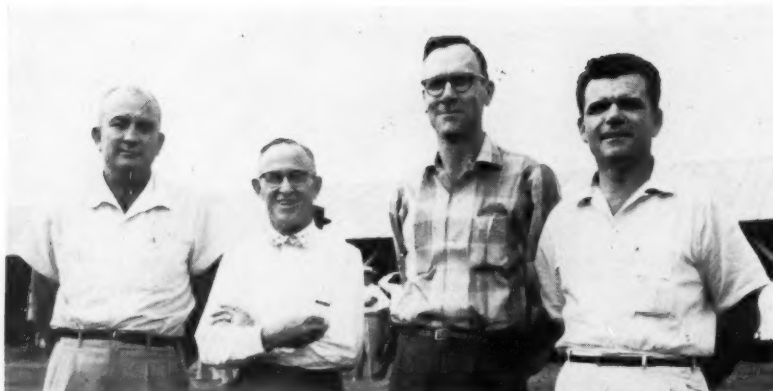
No doubt about it, work stoppages cost you double in these days of higher initial equipment costs, increased maintenance and spiraling wages. Only profitable answer to these higher costs is to increase your operating efficiency. A detailed program of lubrication designed specifically for your kind of machinery, under exact operating conditions, will cut maintenance costs and boost output. Ask our industrial engineers to analyze your requirements . . . recommend the correct Mobil lubricant for every moving part . . . proper methods of application . . . and set up a regular lubrication schedule to boost production, eliminate work stoppages and cut maintenance costs.



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FOUR EXECUTIVES of ginners' associations were among the many cotton industry representatives at the Beltwide Conference. Left to right are Edgar L. McVicker, Oklahoma Cotton Ginners' Association and Cottonseed Crushers' Association; Tom Murray, Alabama-Florida and Georgia Ginners' Associations; W. Kemper Bruton, Arkansas-Missouri Ginners' Association; and Edward H. Bush, Texas Cotton Ginners' Association.

ly would be retarded because of competition from lower wage rates.

Now let us turn our attention to that part of the crop—currently about one-fourth—produced on farms having less than 15 acres of cotton per farm. On some of these farms cotton is a supplemental enterprise rather than the main crop. It is used to round out a diversified farming system in order to get better use of labor and equipment. Mechanization up to harvest is feasible. And on many of these farms cotton can be produced efficiently. On another rather large group of these small farms cotton is the major enterprise. During recent years there has been a tendency toward consolidation of farms, including small cotton farms. But when we take a realistic look, the theory of making big cotton farms out of little ones isn't a complete and practical solution to the problem. Much of this unmechanized "residual" is associated with small fields and rough topography. Cotton is grown mainly as a market for family labor that does not have alternative employment opportunities.

To summarize—taking mechanization technology and farm sizes pretty much as we find them—we might say that our mechanization potential for the near future looks something like this:

1. The fairly complete mechanization of about 50 percent of the crop . . . substantially more, or somewhat less, depending partly on possibilities for increasing the economic efficiency of mechanical harvesters, . . . but also depending partly on such things as progress in weed control and on the availability of labor and on wage rates.
2. Substantial progress toward supplementing hand methods of weed control with mechanical and chemical techniques . . . replacing perhaps as much as 50 percent of the labor presently associated with this operation—and potentially applicable to probably 85 percent of the crop.
3. Some further replacement of animal power with tractors—with tractors providing power for perhaps as much as 95 percent of the total crop.

These estimates are not offered as carefully measured projections, but simply as a means of setting out the relative magnitudes of some of the mechanization possibilities that lie ahead. Real-

izing these potentials will entail some rather drastic changes in the organization of cotton farms and in the skill with which they are managed.

As we look at the problems that will confront cotton growers in making these shifts, we certainly need to be taking inventory of our research and educational programs. Surely research has a great responsibility in developing the kinds of information that will be needed to guide these adjustments in cotton agriculture. And the job of translating this information into actual adoption on cotton farms will demand much of Extension and other agencies responsible for agricultural education.

## The Southeast Is Moving Ahead

By GEORGE H. KING, Athens, Director, Georgia Experiment Stations.

The first half of this century has indeed been an era of unprecedented change for our country.

Agriculture, for example, has changed more in the past 50 years than in the previous 1900 years since the birth of Christ with the most significant changes coming in the past 15 to 20 years. During these years, the Southeast—an area including Alabama, Georgia, Florida, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia—has been moving ahead with the rest of the nation.

More people are finding the Southeast a promising place in which to live. From 1930 to 1950, the population of the U. S. increased by 23 percent; the population of the Southeast increased by 33 percent. Our farm population has decreased only 25 percent, as contrasted with a 40 percent national decrease.

Fortunately for the Southeast, the movement of manufacturing plants to this area is taking care of the increased population and is absorbing in those plants many persons from small farms as well as many small farmers who, because of the size of their operations and other reasons, could not make an adequate income on the farm.

In 1935, there were 15,445 manufacturing plants in the Southeast employing 947,998 persons; by 1953, the number of plants had increased to 35,539, the

number of employees to 1,964,549. The Southeast, since 1935, has moved from a point where the industrial payrolls and the cash farm income were on a one to one ratio to the point where this ratio is now one part cash farm income to two parts industrial payroll.

Each year fewer farmers on larger farms are dividing the farm income. From 1935 to 1950, the number of farms in the Southeast decreased by over 300,000. Cash income has increased from \$552 to \$2,909 per farm, almost six fold. The size of the farms has increased 30 percent.

The developments of the past few years have been startling—and point to even more startling changes in the future.

First, there is the change in the emphasis given various farm enterprises. Second, there is the greater efficiency per unit of production. Let us examine first the change in emphasis. In 1935, three-fourths of the Southeast's cash farm income was from farm crops and one-fourth from livestock and poultry. In 1955, two-thirds of the cash farm income was from crops and one-third from livestock and poultry. In 1935, cotton made up 33.3 percent of the total cash farm income of the Southeast. In 1955, this was down to 22.4 percent, and in my opinion, this is the lowest point to which we should allow this percentage to fall.

The percentage of income from cattle and calves has increased from 5.8 percent in 1935 to 7.5 percent in 1955; hogs from 3.7 percent to 6.2 percent; dairying from 7.5 to 8.9 percent, and poultry from 6.4 to 12.7 percent. The increase in livestock production has meant an increase in pasture acreage from 37,000,000 acres in 1935 to 51,000,000 acres in 1955.

Now, let us examine briefly the changes that have taken place in our efficiency of crop production. There are certain critical factors which lead to efficiency of production and the farmer of the Southeast is observing these factors more and more. This has enabled him to increase his yields per acre by approximately 40 percent in the past 20 years.

Among the critical factors which have led to increased efficiency in production are land selection, mechanization, fertilization, new varieties and hybrids, weed control, and insect control.

Southeastern farms are becoming mechanized. From 1945 to 1955, the number of tractors on Southeastern farms increased from 152,800 to 562,400. Percentage of the cotton crop produced with tractor power has increased from 28 percent in 1947-48 to 67 percent in 1954. This still shows the Southeast as the section most dependent on animal power and hand labor, but indicates it was the section which made the greatest percentage increase in the use of tractor power during the past seven years.

From 1910 to 1940, the annual use of fertilizer remained static at about four million tons; since 1950, however, the Southeast has used not less than eight million tons annually. The development of organic insecticides has stimulated the use of fertilizers. For example, we now anticipate a top crop of cotton and fertilize for its development.

Weed control with herbicides is relatively new but is adding its weight to the efficiency of crop production. With the use of herbicides and the development of systemic poisons, it is not beyond the realm of reason to visualize the day when cotton will be "laid by" when it is planted.

By applying the results of research,

Southeastern farmers have, since 1935, increased the average yield of cotton from 240 pounds per acre to 466 pounds per acre; the average yield of tobacco from 920 pounds per acre to 1,500 pounds per acre; and the average yield of peanuts from 772 pounds per acre to 1,075 pounds per acre.

The more progressive Southeastern farmer of today, with larger holdings and with an appreciation of the products of research, is producing agricultural commodities more efficiently than at any time in his history. And the forward progress has only begun. I predict that in 15 years, instead of having 1.5 million farms with an average size of 100 acres, the Southeast will have one million farms with an average size of 150 acres; that our sources of cash farm income will remain in approximately the same proportion as at present; that 15 years hence this income will amount to \$7.5 billion instead of \$4.5 billion at present; and that in-

stead of an average cash farm income of \$2,909, the average cash farm income will be \$7,500.

## The Role of Conservation in Cotton Production

By C. W. CHAPMAN, Athens, Georgia State Conservationist.

During the past 15 to 18 years, a practical and workable system of land capability classification has been developed and put into wide use.

This system is an aid in planning use and management of land and the process of putting the plan to work has come to be known as "Soil Conservation Farming," which obviously has a role in mechanized cotton production.

• **Adapted Soils** — Let's take a brief look at the land capability classes which are

deemed suitable for cotton production in the Southwest:

Class I land is well-drained and productive. It is so nearly level that erosion is not an important factor. It can be cultivated safely year-after-year if winter cover crops are grown to maintain organic matter and keep the land productive. Unfortunately, most cotton farms in the Piedmont contain very little Class I land.

Class II land is more plentiful. Due to slope, soil type, and other factors, there is usually moderate erosion. This land class, when it occurs on slopes, requires contour tillage and usually needs terraces and other water-disposal measures. However, these mechanical measures in themselves are not enough. We need rotations that include at least one year of cover for each year of cultivation. Some level, wet areas require some drainage.

The major portion of our cropland falls in Class III. It requires intensive manage-

**EROSION CONTROL**, so important in cotton production in the Southeast, received special attention at the demonstration at Georgia Experiment Station during the 1956 Beltwide Cotton Mechanization Conference. A cover crop should—and frequently does—precede cotton, and it's desirable to (1) keep that cover on the land as long as possible prior to cotton planting and (2) maintain a protective mulch of the cover crop residue in the top inch or two of soil. This means trashy soil and the problems that go with it. Researchers displayed a number of advances which help combat these problems. Photo No. 1 shows fertilization and planting with double-disk openers, which work satisfactorily under trashy or mulch planting conditions. Conventional equipment tends to become clogged under the same conditions. Photo No. 2 shows fertilization, planting, and pre-emergence weed control treatment on trashy soil. Disks are used to open and close the fertilizer furrow, and to open the seed furrow. Nozzles for applying pre-emergence herbicide are mounted behind rollers in the rear. Effectiveness

of the herbicide is not reduced by the trash. Photo No. 3 shows F. F. Cowart, left, resident director of the Experiment Station, and J. G. Futral, agricultural engineering department head, who were largely responsible for the success of the demonstrations, as they were snapped by one of the many photographers present.

A new research development called the "fallow cultivator," with attachment for spraying post-emergence chemicals, is shown in Photo No. 4. Cultivator blades not only get weeds and grass, but also sweep aside rocks and clods. This helps prevent the device from being pushed up so that it would spray chemicals too high on plants. It also paves the way for more efficient mechanical picking. Disk-gang cultivators, shown in Photo No. 5, throw dirt out from the drill, then back. They may be set to run from four to eight inches from the drill, and to throw from one to six inches of dirt at any desired driving speed. Shallow soil penetration minimizes root damage. Disk-gang cultivators operate in trashy soil without clogging.



ment practices such as a complete water-disposal system, well sodded outlets, contour tillage, and strong rotations. To be effective, these rotations should include good ground cover at least two out of three years.

In many of the principal farming areas of the Southeast, fully half of the cultivated land is Class III land. It constitutes our major problem. If we neglect or misuse this extensive area of cropland, our cotton production will be badly crippled.

Class IV land is better suited to pasture or similar uses than to cultivation. It should be used for cotton or similar clean tilled crops only if there is not enough land in other cultivated classes to meet the needs of the farm. It can be cultivated safely every three or four years, if adequate cover is kept on the land the rest of the time.

Acre yields of most crops in this class are low. Farm machinery cannot be operated as efficiently on these steeper slopes as on the smoother land in other cultivated classes. Contour strip arrangement of crops is needed on Class IV sloping land when cultivated, especially on slopes too steep to be terraced. Heavy-duty vegetation is needed in the intervening strips.

Class II and Class III land present our chief problem in cotton production. Class I land presents no important erosion hazard, and Class IV land normally should not be used for cotton production.

• **Rotations Increase Yields**—It is a well-known fact that good rotations increase soil organic matter. They increase efficiency in the use of fertilizers. They increase crop yields. At the Southern Piedmont Conservation Experiment Station, Watkinsville, Ga., it was found that effective soil conserving rotations must contain ground cover in proportion to the needs of the land and its susceptibility to erosion.

Land where cotton was grown continuously over a six-year period lost 4.0 tons per acre of organic matter and 280 pounds per acre of nitrogen. The soil was in poor physical condition. It crusted easily. The cloddy condition made planting and cultivating difficult. In general, stands and growth were poor.

Both soil and water losses were much greater on Class III land than on Class II land. Nearly twice as much water was lost and more than five times as much soil washed off the steeper slopes. This happened during a six-year period when intense storms were fewer than usual.

In a two-year rotation on Class II land, vetch green manure and crotalaria together supplied 2.6 tons per acre of dry leguminous material. The yield of seed cotton increased 110 pounds per acre over continuous cotton.

A cropping system that provided adequate protection for Class II land was not necessarily adequate for Class III land. Where Class III land was poorly protected, soil and water losses were excessive. Soil analysis indicated high losses of both organic matter and nitrogen.

A three-year lespedeza-based rotation supplied adequate protection for Class III land. This rotation produced 339 more pounds of seed cotton per acre than continuous cotton. The legume residues increased both soil organic matter and nitrogen. Other studies indicated that this rotation maintained a fairly desirable soil structure.

Our way to judge the effectiveness of a cotton rotation is by the ratio between soil loss and cotton yields. At Watkinsville, continuous cotton on Class II land

lost 12.6 tons of soil per bale of cotton produced. On Class III land the loss was 80 tons per bale.

Cotton grown in a two-year rotation with corn, and with winter cover crops turned under, reduced the soil loss on Class II land from 12.6 tons to 4.9 tons per bale of cotton produced. Yields in the rotation increased 76 percent.

On Class III land, cotton grown in a three-year rotation of oats-lespedeza for grain and seed, and the volunteer lespedeza for hay, reduced the soil loss from 80 tons to 14.1 tons per bale of cotton produced. Yields in the rotation increased 67 percent.

In the extensive row-crop producing states of Tennessee, Mississippi, Alabama, Georgia and the Carolinas, we have 41 million acres of cultivated land capable of efficient row-crop production. But improved rotations have been applied on less than a third of this land.

On lands where rotations have been applied, there are still opportunities for improvement. Present trends toward the use of stronger rotations, based on perennial grass-legume sods, indicate that adequate rotations on most of our cultivated lands are still somewhat more in the realm of opportunity than in the field of accomplishment.

But improved rotations based on peren-

nial grass-legume sods are steadily gaining in favor. Farmers in all areas where the acreage in grass has been greatly increased are developing interest in rotating between cultivated crops and pasture sod on their plowable pastures.

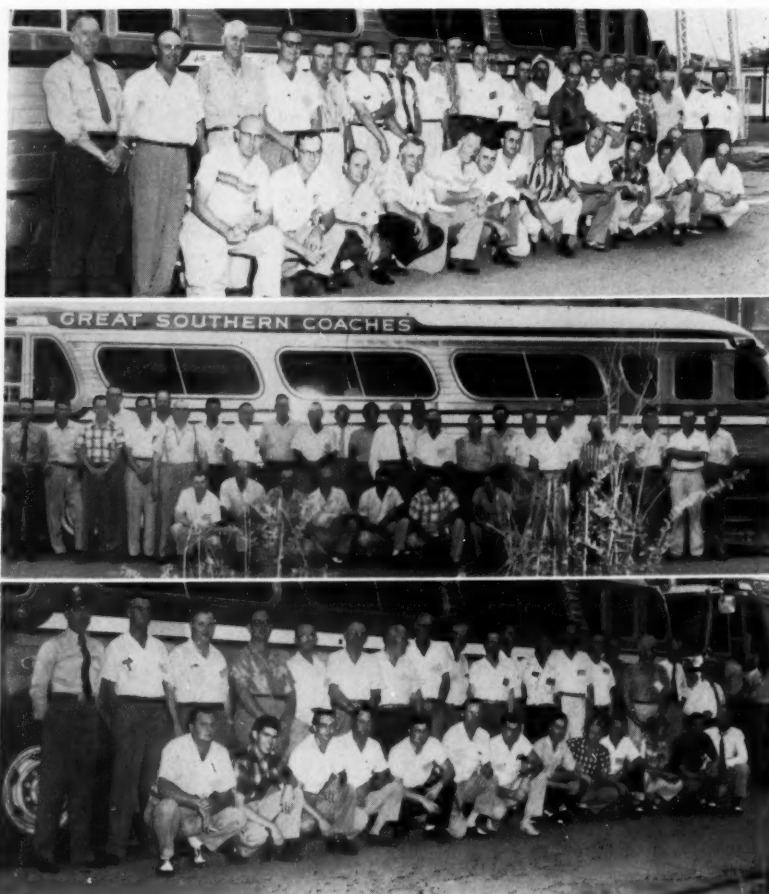
Other farmers are planting mixtures of grass and clover on cropland to begin rotations between hay or grazing crops and cultivated crops. This is a wholesome trend and one which deserves the support of all who are interested in soil conservation and better agriculture.

The character of the rainfall everywhere in the South is such that it is not possible to retain on cropland fields all the water that falls. Consequently, terraces are widely used. They function chiefly by intercepting runoff at intervals down the slope and draining it off to pro-

(Continued on Page 51)

## Mitchell Is Superintendent

David T. Mitchell has been named superintendent of the oil refinery section of A. E. Staley Manufacturing Co., Decatur, Ill. He succeeds Maurice M. Durkee, who is retiring after 30 years with the firm. Durkee plans to continue to serve as an advisor to salad oil refineries in the U.S.



## Arkansas-Missouri Ginners Shown on Tour

MEMBERS of the Arkansas-Missouri Cotton Ginners' Association and their guests are shown in these three pictures made during their recent cotton mill tour, sponsored by the Association with the cooperation of the American Cotton Manufacturers' Institute and individual mills.



## • Maid of Cotton Search Starts

THE 1957 MAID OF COTTON contest officially opened Sept. 5, and the Maid's North American itinerary is virtually complete. She will visit 30 American cities, three in Canada and tour leading European fashion centers.

Finals of the contest will take place in Memphis, Dec. 27-28, with the Maid leaving the next day for New York in time to participate in the gala New Year's Eve celebration in Manhattan's Times Square. During January, she will be outfitted with a complete new all-cotton wardrobe created for her by more than 40 famous American designers.

She also will appear on network television and radio shows as well as pose for newspaper syndicate and magazine photography. She will see top Broadway plays and visit many of the well-known places of interest in and about New York.

The final feature of the Maid's month in New York will be the annual Maid of Cotton fashion show on the Starlight Roof of the Waldorf Astoria. Here, for the first time, her cotton wardrobe will be shown before an audience of almost a thousand members of the press, designers and apparel manufacturers, and leaders of the cotton textile industry.

The official opening of the 1957 tour is scheduled to take place in Miami, Jan. 30.

The Maid of Cotton contest is open to any girl who was born in one of the cotton-producing states, who has never been married, who is between the ages of 19 and 25 inclusive, and who is at least five feet, five inches tall.

Official application forms may be obtained by writing to the National Cotton Council, P. O. Box 9905, Memphis 12. All entries must be postmarked by midnight, Saturday, Dec. 1.

The Maid of Cotton program, now in its nineteenth year, is sponsored by the National Cotton Council, Memphis Cotton Carnival Association, and the Cotton Exchanges of Memphis, New Orleans, and New York.

## Conference Planned on Textile Finishing

Two hundred research specialists will gather at the Hotel Statler, Washington, on Oct. 3-4, for the fifth annual Chemical Finishing Conference.

The meeting, sponsored by the National Cotton Council's Utilization Research Division, will attract top scientists and technologists from finishing plants and textile mills from the Eastern Atlantic area. They will discuss latest developments in chemical finishing of cotton cloth.

High on this year's agenda are research reports on the new "non-chlorine retentive" resin finishes, as well as crease-holding and wrinkle-resistant treatments that can be applied to cotton garments by drycleaning establishments.

Wash-and-wear treatment for cotton continues to claim wide attention among researchers and will share the spotlight at the Conference. Sessions will also cover latest developments on fire-, water-, and heat-resistant finishes and a report on "breathable" waterproof cotton fabrics.

General chairman is J. Marshall Cole,

vice-president of Cold Spring Bleachery, Yardley, Pa., and president of the National Association of Finishers of Textile Fabrics. Presiding over the speaking sessions will be Emery I. Valko of Onyx Oil & Chemical Co., Jersey City, N. J.; and William M. Segall of the National Cotton Council, Washington.

## U.S. Products Shown At European Fairs

U.S. agricultural products will be displayed at International Trade Fairs in Salonika, Greece; Zagreb, Yugoslavia, and Vienna, Austria, in September in furtherance of USDA's continuing program to expand foreign agricultural markets. Feature items on display will include cotton, dairy, grain and fruit products.

## U.S. and India Agree On Record Purchase

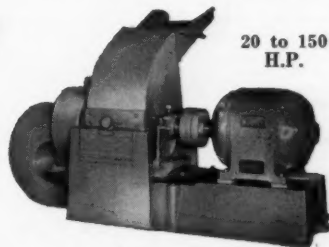
Secretary of Agriculture Ezra Taft Benson has announced that the largest agreement ever negotiated for the sale of U.S. agricultural commodities under Title 1 of Public Law 480 has been reached with the government of India.

The agreement provides for the sale of \$360.1 million worth (market value, including certain ocean transportation costs) of surplus farm products to India.

The U.S.-India accord provides for purchase by India of \$200 million worth, or about 130 million bushels of wheat; \$70 million worth, or about 500,000 bales of cotton; \$26.4 million worth, or 4.4 million bags (100 pounds) of rice; \$6 million worth, or 6 million pounds of tobacco.

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## Oil Mill Equipment for Sale

**OIL MILL EQUIPMENT FOR SALE**—Rebuilt twin motor Anderson high speed expellers, French screw presses, stack cookers, meal coolers, fourteen inch conditioners, filter presses, oil screening tanks, complete modern prepressing or single press expeller mills.—Pittcock & Associates, Glen Riddle, Pa.

**FOR SALE**—Filter presses; screening tanks; single and twin motor Anderson Super Duo expellers, with conditioners; several extra 36" cooker dryers and conditioners. All steel linter baling presses; 141-176 saw linters; seed cleaners; No. 163 separating units; bar hullers; lint beaters; stack cookers; rolls; hydraulic press room equipment.—V. A. Lessor & Co., P. O. Box 108, Fort Worth, Texas.

**FOR SALE**—Used 176- and 141-saw Carver linters with pneumatic units; also filters, gummers, elevating and conveying equipment and other miscellaneous oil mill equipment. All in excellent condition.—Valley Machinery & Supply Co., P. O. Box 2252, DeSoto Station, 612 N. Main St., Memphis, Tennessee.

**FOR SALE**—Anderson Super Duo expellers. Filter presses. 72" and 85" cookers. Butters milling machine. Carver 176-saw Tru-line Gummer. Double box linter press. Attrition mills. Single drum hull beater. 20" to 70" fans. Motors: 75 h.p. and under.—Sproles & Cook Machinery Co., 159 Howell St., Telephone RI7-5958, Dallas, Texas.

**FOR SALE**—Anderson 24" cooker, new equipment, never used, complete with 3 h.p. gear motor drive, 220/440 V., 60 cycle, 3 phase, variable feeder mechanism.—Skippy Peanut Butter Division, Minneapolis, Minn., Phone West 9-7871.

**INSPECTIONS and appraisal.** Dismantle and installation.—Oscar V. Shultz, Industrial Engineering, Phone Butler 9-2172, P. O. Box 357, Grapevine, Texas.

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150	Sq. Cage	900	1188
100	Slipring	1200	1076
100	Slipring	900	1189
100	Sq. Cage	1200	758
100	Sq. Cage	900	879
75	Sq. Cage	1800	490
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## Gin Equipment for Sale

**FOR SALE**—Two drying and cleaning groups including Murray 7-cylinder cleaners, towers, burners, fans, piping, etc. Murray 14' big bur machine, Murray all-steel up-packing press, 4-80 saw Murray gin stands, 4-60" Super units.—Sam Clements Co., Phone 882 & 1362, West Memphis, Ark.

**FOR SALE**—Cotton gins, oil mills, compresses. Contact M. M. Phillips, Phone TE-8555, P. O. Box 1288, Corpus Christi, Texas.

**FOR SALE**—All-steel down-packing Continental press with long stroke Continental trampler, raised for fast ginning. Practically all new. First class shape. New right angle drive for trampler.—Box QS, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas, Texas.

**FOR SALE**—One all-steel 4-80 Lummus gin in excellent condition, bur machine, tower drier, new sheet iron building. Can be moved or operated where located. Greatest gin guy in Texas, price \$20,000. Also have a new 5-50, electric power, bur machine, two tower driers, extra lot of cleaning equipment, large seed house, cotton house, new air-conditioned office, nice 7-room residence, all on 4 acres of land, one of the best gin locations in South Texas. 1954 net profits over \$50,000. Owner has other interests and wishes to sell. Priced to sell. These and many others. Call, write or wire M. M. Phillips, P. O. Box 1288, Phone TE-8555, Corpus Christi, Texas.

**FOR SALE**—We have a lot of good gin equipment on hand. Give us a chance to supply your needs. Get your Magni-Power magnet now. Don't wait.—Sam Clements Co., Phones 882 & 1362, West Memphis, Ark.

**FOR SALE**—Long stroke one-story down-packing all-steel Murray press complete with trampler, 14' steel Murray bur machine completely rebuilt all new saw drum cylinder, brush cylinder, and directional cylinders, 52% Murray separator and vacuum dropper complete, new Hardwicke-Etter short stroke trampler complete with kicker and charge box, Lummus one-story down-packing wood press complete with trampler, Cen-Tennial trampler, EJ trampler, Continental ram and casing, 2-80 saw Murray bolt suction gin stands, 3-80 saw brush Continental Model F gins, 3 FEC Mitchell feeders, 3-80 Mitchell steel conveyor distributor, 6-cylinder horizontal Murray cleaner on "V" drives, 72" Continental separator complete with vacuum, one 1½-M Hardwicke-Etter burner, two 1-M Mitchell burners, three #30 Mitchell vaporizers, three 72" 7-cylinder Murray type incline cleaners complete with vacuum fronts, one 35" Sturdivant fan with multi-blade, one 40" Murray fan. All equipment priced to move.—Wonder State Mfg. Co., Paragould, Arkansas.

**SPECIAL BARGAINS**—One complete 4-80 late model Murray gin plant with Super Mitchells, Mitchell conveyor distributor, Hardwicke-Etter cleaner and 14' steel Hardwicke-Etter bur machine, to be moved. Several late model Murray gins, equipped with safety breast levers, roll dump and full vision glass fronts. Several batteries of 60" and 66" Super Mitchells, completely reworked and nicely refinished. One 12-cylinder and one 16-cylinder 52" Stacy cleaning systems with hot air attachments and one 9-cylinder 50" Hardwicke-Etter with V-belt drive. Steel separators: 48" type M and type C Lummus, 50" and 70" Hardwicke-Etter flat screen, 52" Murray and Stacy and 72" Continental. One million Stacy and 1½-million Murray heaters. One 230 h.p. 12-cylinder M-M gas engine, like new. Electric motors in practically all sizes. One 34' by 9', 40,000 pound capacity Howe motor truck scale, with concrete deck and type recording beam and equipped with State Seal of approval. New V-sheaves, open end V-belt and fasteners, steel conveyor and trough and a general line of transmission equipment. New Government type tower driers. Hundreds of other miscellaneous items of machinery and supplies in Waco stock and available for prompt shipment. For your largest, oldest and most reliable source of used and reconditioned gin machinery, contact us. Qualified graduate engineer to assist you with any of your machinery problems at no obligation. Call us regarding any machinery or complete plants you have for sale or trade. R. B. Strickland & Co., 13-A Hackberry St., Telephones: Day 2-8141, Night: 3-7929, Waco, Texas.

**FOR SALE**—Get the new stick & green leaf machines from us. This is the finest cleaner that has ever been made and we can easily engineer it into your plant. Removes up to 75% and 80% of the foreign matter in cotton. Call or write us for details.—Sam Clements Co., Phones 882 & 1362, West Memphis, Ark.

**FOR SALE**—3-80 Continental partial outfit including 50" Impact cleaner and 10' bur machine. Bargain.—Sam Clements Co., Phone 882 & 1362, West Memphis, Ark.

**FOR SALE**—Three iron frame 141-saw linters and 4 iron frame 176-saw linters—all equipped with Carver steel head brushes, breast, breast ends, rib rails and ball bearing floats, independent brush and saw drives, and condensers. 12 iron frame 141-saw linters, same equipment as above except have idler swing drives for brush and saws. One 4-high 85" Buckeye cooker. One 30" Sprout Waldron attrition mill direct connected to 2-40 h.p., 3-phase 60 cycle 550-volt motors with starter; one 36" Bauer Bros. attrition mill direct connected to 2-50 h.p. motors, 3-phase, 60 cycle, 220-volt (no starter). One set 5-high crushing rolls, plain bearings, with oil pressure system (rolls reground once since new). One square iron frame hull packer, one 48" Bauer pneumatic seed cleaner, one 48" Bauer No. 154 seed cleaner, one 54" Atlanta utility seed cleaner. Other good oil mill machinery.—J. E. Lipscomb, Box 716, Phone 2-5901, Greenville, S. C.

**FOR SALE**—Government type tower driers, automatic gas heaters, blow pipes, and fittings. We are prepared to deliver and install driers, and any gin machinery in conjunction with drying equipment.—Service Gin Co., P. O. Box 21, Phone 4251, Ville Platte, Louisiana.

## Equipment Wanted

**WANTED**—Five Lummus Jet lint cleaners. Give lowest price.—Box CY, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas, Texas.

## Personnel Ads

**EXPERIENCED** in all phases of cotton production, wish to contact firm interested establishing business in Old Mexico.—Box AL, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas 26, Texas.

**WANTED**—Responsible man wants bookkeeping or other office connection with large volume gin in Texas or Western State. Limited experience managing gin. Long experience selling. Could buy working interest. Reply Box BW, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas, Texas.

**WANTED**—Night Superintendent. Must be familiar with operation of V. D. Anderson expellers. This is a good job for sober, honest, efficient, loyal operator. References required.—Box CJ, The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas, Texas.

## Power Units and Miscellaneous

**FOR SALE**—New and rebuilt Minneapolis-Moline engines, from 35 h.p. to 220 h.p., call us day or night for parts and service.—Fort Worth Machinery Co., 913 E. Berry St., Fort Worth, Texas.

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**FOR SALE**—Richardson and Fairbanks scales, Niagara vibrating screen, Buckeye engine, Titusville boiler, meal coolers, condensers, Roots-Connorsville blowers, heat exchangers, hammer mills, Eureka dust collectors, pumps, valves, electric motors and electrical starting equipment, A-1 condition. Contact Lee Atherton, Archer-Daniels-Midland Co., Investors Bldg., Minneapolis, Minn.

**FOR SALE**—Power units: 139 h.p. Le Roi D-1000, \$1,350; 671 GMC, 130 h.p., \$2,000; Twin 671 GMC, 260 h.p., \$5,000; RX1SV Le Roi, 400 h.p., \$7,500; 75 h.p. RPM Westinghouse electric motor, \$500.—Wonder State Mfg. Co., Paragould, Arkansas.

**FOR SALE**—200 double deck army steel cots in good condition. Call or write Orb Coffman, Phones 44 and 70, Gore, Texas.

**FOR SALE**—One McCormick M-120 high-drum cotton picker mounted on a Farmall Super M. Has picked 100 bales. \$6500.—W. H. Ritchey, Phone JU 3-2278, Bonham, Texas.

**AVAILABLE**—Have 50 cotton wagons for lease, capacity 4 bales picked cotton, bed size 14' x 8'. For further information phone, write or wire: Ronnie Round Tire Service, Phone HOBART 4-1472, P. O. Box 1316, Donna, Texas.

**FOR SALE**—1-110 h.p. Continental diesel engine with all necessary pumps and pulleys to run. Engine is in good shape.—Charles F. Reynolds, Woodrow Plantation, Malvina, Mississippi.

## Cotton Grower and Ginner

# Interest in Farming Made Harnish Political Leader

■ CALIFORNIAN, who started as truck farmer, became concerned over trends in Thirties; now heads Fresno County Republicans.

LOYD A. HARNISH, California cotton producer, gin operator and Fresno County Republican Committee Chairman, was the subject of a recent article in The Fresno Bee. In addition to his farming interests, which include cotton, cattle and sheep, Harnish operates the H & H Cotton Co. Gin at Five Points and has oil and other business interests.

The newspaper says that Harnish, while still a schoolboy, learned his first farming, including mule skinning, from his father, an orange grower. In 1908 when he was graduated from Covina High School, he recalls, his major interests were farming and Paryl Speer, a school days girl friend whom he married 10 years later.

• **Began as Truck Farmer**—Harnish's first farming on his own was a truck garden operation in which he drew strongly upon farm laborers of Japanese descent.

"I learned a lot of farming from them," he says. "They are wonderful farmers."

His farm was located at the present site of the Los Angeles County Fair-ground near Pomona.

Harnish recalls with nostalgia how he drove the old truck into Los Angeles with a load of berries every night during picking season in order to be at the commodities market for the sale which began at midnight. After the sale there was just about enough time to return home and begin the next day's work.

"I learned every job there is to be done on a farm, and there still isn't anything on a ranch which runs that I can't handle and repair as well as the next guy," he says with some pride.

In 1924 he went to Fresno, primarily intending to farm but he soon found himself with a second occupation as manager of the Peerless Pump Co. which was established in Fresno by his brother, Glenn. A few years later Lloyd bought out the distributorship and in 1933 he became a vice-president of the Food Machinery Corp., of which the pump firm was a subsidiary.

• **From Farming to Politics**—Harnish declares he became interested in politics mainly as an adjunct to his farming.

"More than anything else I got into politics in the middle Thirties because I felt there were too many controls and too much meddling both in farming and other private affairs," he relates.

Harnish, in addition to politics and business activities, is a Scottish Rite Mason, a charter member of the Tehran Shrine Temple and other Masonic groups and a member of the Fresno Rotary Club, the University-Sequoia Sunnyside Club and the selective service board, having been appointed by Democratic Governor Culbert L. Olson in 1941.

After a heart attack in May, 1955, Harnish was ordered by his doctor to reduce his activities. He complied by

cutting his work day from 18 to 12 hours, cutting down on smoking and avoiding physical exertion.

His schedule still gets him up before daybreak and he often is on his way to

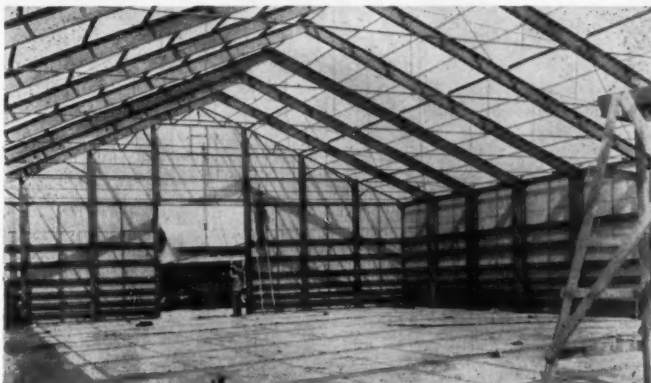
the West Side by 6 a.m. If he is spending the day in town he leaves home at 7 a.m. and generally is gone until dinner time.

Mrs. Harnish has not been active in politics. But their daughter, Shirley, has been an enthusiastic Young Republican for a number of years. She now is Mrs. Richard Brinker. The Brinkers have a 16-month-old daughter, Linley.

## Price Support Is Same

Turkish cotton prices will be supported in 1956-57 at the same level as last season (18.63 to 19.43 U.S. cents per pounds). Support is through government absorption of any losses by co-operatives, USDA says.

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## "Red Headed Stepchild"

(Continued from Page 28)

turnout and shortening of staple resulting from artificial drying. (This was frequently a complaint during the early days of cotton driers.)

Driers helped to stabilize constantly dwindling volumes, and were in many instances a major factor in increasing individual plant volumes. Driers were found to be a very essential element in getting the most efficient use of modern cleaning equipment and have contributed immensely to the quality of cotton through more efficient trash removal as well as reduction of moisture.

• **Lint Cleaners Prove Value** — While only about 20 percent of North Carolina gins are now equipped with lint cleaners,

they have thoroughly proved themselves as worthwhile additions. Lint cleaners have tended more nearly to equalize grades throughout the state and have made it possible to hold trash content in line with, or even below, other grade factors. Also the blending effect accomplished by lint cleaners has helped to improve the grades of weather and insect damaged cotton, particularly in eastern areas of North Carolina.

Another facility which has helped to strengthen the demand for North Carolina cotton in recent years is the North Carolina Department of Agriculture Fiber Testing Laboratory. This laboratory releases test results at two-week intervals during the ginning season on cottons selected at 20 or more marketing and ginning points throughout the state. These results are released to both mills and the trade, which provides some in-

dex to fiber qualities by years and by areas of production.

Smith Doxey class sheets are now used by practically every ginner as a check sheet on performance. The State Department of Agriculture Division of Markets and Extension Service also find this information invaluable as a means of expediting the location and correction of ginning difficulties as they may occur.

• **Not a Utopia** — Thus far, a reader might be inclined to believe that North Carolina is approaching Utopia in ginning. This, however, is not the situation. There are many possibilities and needed further improvement of facilities and services. Many cotton farmers, unfortunately, have placed more and more of the responsibility of cleaning and conditioning cotton on the ginner because of both their observations and, in some instances, the unwarranted claims made by ginners regarding their ability to clean and gin green, damp, and roughly harvested cottons.

Closer cooperation between farmer, ginner, and buyer would help to clarify some of these misunderstandings regarding responsibility for better quality. Wide variations in grade within a given community, and even from the same gin, are proof of the differences with which various farmers regard the handling and preparation of their cotton prior to ginning. Plant defoliation, where justified, along with reasonably early, more-careful harvesting and protection of seed cotton from weather damage, would all tend to make a more uniformly high quality product throughout the state.

Ginners realize there are wide differences in seed cotton due largely to picking practices and on-the-farm handling and can therefore appreciate the importance of pre-processing inspection of individual lots of seed cotton by the ginner before it is actually taken into the gin plant. At gins where seed cotton storage facilities are available, many bales of cotton could be materially improved in grade by a few days' storage before ginning. Even in cases where storage facilities are not available, a grouping of similar lots of seed cotton where possible, and appropriate adjustment of machinery and combinations, could effectively raise the overall average grade.

Anyone not accustomed to the practice would be amazed at the effort made to protect lint cotton with a bale wrapping, and, then through normal market channels, the covering is practically destroyed by the cutting of bales for samples. Steps are being made to correct this practice; but it is a long established system and such practices are difficult to change.

The best possible utilization of bagging should be made to cover both heads and faces of bales. Some press crews have devised their own means of placing the bagging pattern on the platen of down-packing presses, folding the pattern in such a way that it will not interfere with the insertion of ties.

During the past several years labor requirements and operating costs have steadily increased, brought about by larger, more elaborate plants, increased fuel, power, and supply costs, along with wage legislation. Ginners need to analyze their operations very carefully toward improving efficiency and revising rates where necessary to absorb their higher costs, plus a reasonable profit.

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## He Controlled Root Rot

F. M. VINING, in Texas' Lower Valley, makes over two bales per acre on land that once was heavily infested with cotton disease.

By LINN FOUST

Soil Conservation Service,  
San Benito, Texas

**R**OOT ROT that has killed as much as 95 percent of the cotton in some fields during bad years has been reduced to as low as two percent by planned, short periods of intensive cropping treatment.

This has been the experience of F. M. Vining, who farms near Weslaco, Texas, in the Lower Rio Grande Valley. Mr. and Mrs. Vining pitched a tent on 10 acres of this land in 1923. Now their holdings have grown to over 1,000 acres. Like most farmers, they have had a multitude of problems during these years—including drouth, insects, salt and, finally, root rot.

"Certainly, there is a lot that I don't know about root rot," Vining says, "but I do know from experience that it decreases with crop rotation and cover cropping. Right now, it looks like cotton in about one year out of three to me."

• **Leader in Conservation**—As a charter member of the board of supervisors of the Southmost Soil Conservation District, Vining has had a long-time interest in soil problems. He has used so many good soil-building practices on his sprawling 1,000-acre farm that it is hard to tie his methods down to a definite pattern. He delights in buying up old fields, depleted and infested with root rot or salt problems, and giving them new life. And he markets a lot of good beef produced from grazing crops in the process.

The first treatment that an old field gets is land leveling to gain more efficient use of both irrigation water and rainfall. Soil Conservation Service technicians assisting the Southmost District are called in to help with the design and layout of their irrigation system. Vining has his own dirt-moving equipment, which he keeps busy a good part of the year, leveling and reshaping the ground for efficient irrigation.

The intensity of treatment after leveling depends on the condition of the soil. The field with infestation of root rot that killed 95 percent of the cotton last time it was planted has been in Coastal Bermuda grass and Buffel grass for the past two years. A 17-acre block that was purchased in 1952 was leveled and treated with a six-inch layer of gin trash on the cut areas. No water was available to decompose the material until the fall of 1953, but the soil was in good planting condition by the spring of 1954. The yield was 28 bales of cotton, even after the tail-end of a hurricane stripped the top crop.

• **Can't Let Up**—Vining gives a good example of what can happen when the treatment is relaxed. A 13-acre field with over 90 percent dead cotton was cropped to sorghum and grazing crops for two years and came back with a production of 22 bales of cotton in 1954. Root rot revived enough in 1955 to cut the yield to 17 bales. To regain the lost ground,



F. M. VINING is shown examining cotton estimated to yield over two bales per acre, where root rot once was bad.

hubam was planted last fall and the crop was grazed systematically from December until May, then left to make seed. Sudan will follow the clover for spring and summer cover.

Hubam is grazed on a special schedule every year. When the growth is about knee high, Vining puts enough cattle on the ground to graze the stubble to around 10 inches in height. Thereafter the number of livestock is regulated to keep the top growth at about 12 inches. He said that this method makes the clover stool out, leaving a heavy stubble for returning to the land.

"Where there is a combination of root rot and salt problems, keep the ground covered," Vining says. He hauls in cotton burs where the salt content is so high that the soil will not germinate a good stand.

Come what may—with his conservation farming system working as effectively as it is—it looks as though cotton will continue to be a profitable money crop for the Vinings.

### Crop Improvement Meeting

The New Mexico Crop Improvement Association will hold its annual meeting at New Mexico Plains Substation, Clovis, Sept. 12, John T. Stovall, administrative officer, has announced.

Registration for the meeting will begin 9 a. m. Wednesday morning.

### • Castor Bean Crop Short, Price Up

CASTOR BEAN production this year will be about five million pounds, Baker Castor Oil Co., a leading buyer and processor, estimates.

Acreage dropped to about 5,000 acres under the influence of price and harvesting uncertainty at planting time, but the market recently has strengthened to 7.5 cents per pound, delivered to Baker plants in California or New Jersey.

Lack of mechanical harvesting equipment has been a major factor tending to hold down castor bean plantings, the firm reports. About a third of the 1956 acreage will be harvested with a new harvester-huller made in Phoenix, and almost half of the crop will be harvested with USDA stripper harvesters.

Almost half of the 1956 acreage is on irrigated land in Arizona, California, and the Texas High Plains. Crop condition is generally excellent in the Texas High Plains and very good in the other two states. Seed set is more normal in Arizona than it was a year ago. There has been some recent lygus bug damage. The 1956 California acreage is in good shape but will probably produce not quite the record-high field-scale average yields which were achieved last year.

The acreage on dry land is in such areas as Erick and Anadarko, Okla.; Sugarland, Texas; West Helena, Ark.; Brownsville, Tenn., and Cleveland, Miss. All of these areas have had serious drouth conditions, with severe deterioration of beans recently.

### No Extension Needed On Plow-up Date

John White, agriculture commissioner, has announced that no extension was necessary on the cotton plow-up deadline which expired in four Texas Valley counties Aug. 31.

Cotton farmers have almost completely cleaned their fields in Cameron, Wilbacy and the southern parts of Hidalgo and Starr Counties, he said. Only about half a dozen hardship cases were unable to comply with provisions of the pink bollworm law which makes the destruction of stalks necessary. Spring hailstorms made replanting necessary in a few fields and delayed the cotton harvest.

### Feed Conference Will Be in Arkansas

The sixth annual Formula Feed Conference will be held at the University of Arkansas on Sept. 20-21. The theme of the meeting will be "Modern Developments in Livestock Feed Formulation."

The program will begin at 9 a. m. on Sept. 20, and extend through Friday afternoon. All sessions will be open to anyone interested in livestock and poultry feeding. Further information regarding the conference and advance registration blanks can be obtained from Dr. E. L. Stephenson, University of Arkansas, Fayetteville.

■ A. F. JOHNSON and K. A. JURBERGS of The Buckeye Cellulose Corp., Memphis, will present a paper at the meeting of the Division of Cellulose Chemistry at the American Chemical Society meeting in Atlantic City Sept. 16-21.

# 100 Leading U.S. Cotton Counties

THE 100 LEADING COUNTIES in cotton acreage in the U. S. produced more than half of the total crop, as well as planting more than half of the total acreage, U. S. Census Bureau reports for the 1954 crop show. Lubbock County (238,649 acres) in Texas led in total acreage planted, while California's Kern County (385,273 bales) ranked first in production that season.

The following table shows the 100 leading counties ranked according to cotton acreage in 1954 with the number of bales harvested in each of these counties.

Counties	Acres	Rank	Bales Harvested	Rank
Lubbock, Texas	238,649	1	203,299	7
Mississippi, Ark.	223,401	2	203,723	6
Fresno, Calif.	215,223	3	372,528	2
Dawson, Texas	213,276	4	80,191	28
Kern, Calif.	205,517	5	385,273	1
Lamb, Texas	197,934	6	148,412	12
Lynn, Texas	194,304	7	89,001	24
Hidalgo, Texas	184,699	8	150,371	11
Hockley, Texas	179,925	9	109,318	18
Cameron, Texas	172,462	10	164,169	10
Pinal, Ariz.	170,453	11	334,545	3
Hale, Texas	164,810	12	166,519	8
Tulare, Calif.	161,739	13	246,990	5
Maricopa, Ariz.	161,710	14	321,034	4
Terry, Texas	152,683	15	68,140	37
Ellis, Texas	148,754	16	37,876	73
Sunflower, Miss.	143,140	17	104,965	19
Bolivar, Miss.	137,203	18	126,449	14
Haskell, Texas	128,889	19	31,912	89
Hill, Texas	125,407	20	27,848	(1)
Jones, Texas	125,273	21	21,383	(1)
Crosby, Texas	121,820	22	75,969	34
Williamson, Texas	120,241	23	34,010	80
Crittenden, Ark.	119,238	24	129,932	13
Navarro, Texas	118,322	25	27,694	(1)
Kings, Calif.	116,055	26	165,561	9
Nueces, Texas	114,631	27	100,771	20
Pemiscot, Mo.	107,806	28	112,530	17
Floyd, Texas	107,370	29	92,335	23
New Madrid, Mo.	105,223	30	99,652	21
McLennan, Texas	104,894	31	24,275	(1)
Washington, Miss.	100,838	32	81,136	27
Hunnels, Texas	100,182	33	14,566	(1)
Conhoma, Miss.	100,101	34	95,213	22
Poinsett, Ark.	98,793	35	86,527	26
Phillips, Ark.	96,400	36	88,881	25
Hall, Texas	96,370	37	31,731	90
Hunt, Texas	95,302	38	22,431	(1)
Limestone, Ala.	95,158	39	52,306	49
Willacy, Texas	94,692	40	77,845	31
Martin, Texas	94,095	41	35,540	78
Falls, Texas	93,959	42	25,809	(1)
Fisher, Texas	93,364	43	17,332	(1)
Craighead, Ark.	91,022	44	65,881	39
San Patricio, Texas	89,262	45	76,816	33
Washita, Okla.	88,951	46	27,559	(1)
Collin, Texas	86,902	47	32,012	87
Lefflore, Miss.	86,254	48	72,688	36
Tillman, Okla.	86,263	49	23,052	(1)
Dunklin, Mo.	85,618	50	76,838	32
Howard, Texas	83,131	51	24,608	(1)
Jefferson, Ark.	80,888	52	61,498	41
Bell, Texas	80,859	53	22,222	(1)
St. Francis, Ark.	79,270	54	67,079	38
Limestone, Texas	78,312	55	19,544	(1)
Collinsworth, Texas	75,973	56	25,358	(1)
Scurry, Texas	75,849	57	14,539	(1)
Bailey, Texas	75,415	58	40,116	68
Wharton, Texas	74,522	59	54,147	48
Fannin, Texas	74,381	60	23,013	(1)
Madison, Ala.	72,941	61	42,591	61
Cochran, Texas	71,936	62	26,461	(1)
Mitchell, Texas	70,838	63	15,597	(1)
Lee, Ark.	70,172	64	58,169	45
Imperial, Calif.	69,682	65	122,558	15
Knox, Texas	69,565	66	20,256	(1)
Tallahatchie, Miss.	68,880	67	59,467	43
Jackson, Okla.	68,731	68	30,980	93
Quitman, Miss.	67,765	69	58,644	44
Gaines, Texas	65,933	70	29,289	(1)
Kiowa, Okla.	65,919	71	12,848	(1)
Beckham, Okla.	65,303	72	22,366	(1)
Orangeburg, S. C.	64,448	73	37,311	74
Fort Bend, Texas	63,744	74	49,674	51
Tunica, Miss.	62,979	75	59,877	42
Franklin, La.	62,927	76	35,930	77
Lonoke, Ark.	62,332	77	38,586	71
Kaufman, Texas	61,954	78	15,501	(1)
Tom Green, Texas	61,887	79	11,670	(1)
Lamar, Texas	61,275	80	17,511	(1)
Wilbarger, Texas	60,031	81	15,928	(1)
Reeves, Texas	59,642	82	113,105	16
Harmon, Okla.	57,468	83	22,056	(1)
Milam, Texas	57,263	84	17,399	(1)
Jackson, Ark.	56,387	85	42,032	62
Dickens, Texas	56,367	86	17,544	(1)
Humphreys, Miss.	55,566	87	44,946	56
Cottle, Texas	55,354	88	13,696	(1)
Yazoo, Miss.	55,125	89	45,234	55
Caddo, Okla.	55,026	90	17,945	(1)
Madera, Calif.	54,975	91	74,219	35
Desha, Ark.	53,700	92	46,007	53
Richland, La.	53,509	93	31,920	88
Tipton, Tenn.	53,353	94	45,752	54
Childress, Texas	53,052	95	11,080	(1)
Robeson, N. C.	52,920	96	41,602	63
Swisher, Texas	51,501	97	44,267	57
Dona Ana, N. Mex.	50,542	98	78,857	30
Gibson, Tenn.	49,926	99	38,654	70
Castro, Texas	49,413	100	48,684	52

(1) Not one of the first 100 counties.

## Texas Engineering Service To Have Special Courses

Industrial leadership techniques is the title of a five-day, 40-hour course to be conducted by the Texas Engineering Extension Service. The course will be held on the campus of Texas A. & M., Sept. 10-14, with the first session starting at 8 a.m. on Monday.

The purpose of the program is to give management people an opportunity to develop or improve their skills in modern methods of group leadership. Numerous techniques and devices will be demonstrated which can be used to make a talk or discussion more effective. It is intended that this course afford opportunity for individual application and practice as well as "how to do it."

Other courses which will follow this one are:

General Course in Supervision—Sept. 24-28.

Course for Safety Supervisors—Oct. 8-12.

Driver-Training Course—Oct. 22-26.

General Course in Supervision—Jan. 14-18.

All courses will be held in the air-conditioned Memorial Student Center Building.

## Syrian Cottonseed Output Climbs to 250,000 Tons

Syria's commercial production of cottonseed in 1956 is expected to reach a new high of over 250,000 short tons from a greatly increased cotton acreage aided by abundant winter rainfall. If world oil prices are favorable, it seems likely that most, if not all, of the increase over the record 1955 crop of 187,000 tons will be exported, USDA reports.

Syria's expanding cotton crop is by far its most important source of oilseed production. In 1955, 64,000 tons of cottonseed were crushed for oil, 14,000 tons were used for seed and over 81,000 tons were exported.

With a cottonseed oil carryover at the beginning of 1955 of 1,300 tons, estimated oil production of 8,300 tons and imports at 100 tons, the total supply was 9,700 tons. Local consumption accounted for 7,000 tons and exports for 2,100 tons, leaving stocks on Dec. 31 at 600 tons.

Of the estimated 1955 production of about 25,000 tons of cottonseed cake and 10,000 tons of other cake and meal, about 28,000 tons were exported.


## Gypsum Is Recommended For Top Peanut Crop

With an increase in acreage of Virginia type peanuts in Georgia this year, J. Frank McGill, Extension Service agronomist, has called on farmers not to overlook the important practice of applying gypsum, or landplaster.

This practice is essential for adequate pod filling of large seeded Virginia type peanuts, and the material should be applied over the entire fruiting zone of the peanut vines.

■ ALTON WEISS has purchased the Red Gin Co. at Thorndale, Texas. A. T. CARLSON is manager.





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durability and launderability of cotton.

Yes, when it's dress-up time for little belles and beaux — it's cotton all the time.

**\*MEMO TO COTTON GROWERS**

Large quantities of 1" through 1-3/32" staples go into the production of  
quality cottons for children's clothes. In fact, the demand for these  
lengths for all uses has increased until it makes up almost three-fourths  
of the total demand for all lengths.

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## • Oilseeds and Fats Exports Increase

A MAJOR INCREASE in shipments of cottonseed oil, soybeans and soybean oil abroad was one of the chief features of U.S. export trade during the past fiscal year, USDA points out.

Value of the exports of oilseeds and their oils reached an estimated \$400 million during the past year. This was \$98 million more than the 1954-55 total.

Soybean exports are estimated at 69 million bushels during the fiscal year, ending last June. This was a record high and 37 percent greater than the previous high of 51 million bushels moved abroad in 1954-55. Ten years ago, U.S. soybean exports amounted to only four million bushels.

Prime factors in the heavy foreign demand for U.S. beans last year were the following: CCC's accumulated supplies of cottonseed oil had been sold or committed; importers could rely on U.S. deliveries of soybeans as compared with the not-too-dependable supplies from China; importers—mainly in Europe—needed the byproduct cake and meal for feed, U.S. soybeans helped to provide economic activity for European oil mills which, since World War 11,

have operated at less than 50 percent of capacity, USDA says.

Exports of soybean oil and cottonseed oil aggregated one billion pounds in 1955-56 based on shipment data through May and estimates for June. Quantity for 1955-56 is a new record more than 50 percent larger than the 660 million pounds exported in 1954-55 and two and one-half times the 397 million shipped in 1953-54.

Ten years ago exports were less than 100 million pounds; they reached a peak of 495 million pounds in 1951-52 and experienced a severe setback in 1952-53. These vegetable oils are an important part of the diets of millions of people, especially in Europe, where economic activity moves along at a quickened pace, USDA commented.

Two factors predominated in the heavy export volume last year: Decreased production of olive oil in the Mediterranean Basin, and a very short sunflower-seed crop in Argentina in 1955. U.S. cottonseed oil has been highly favored in West Germany's manufacture of top-quality margarine.

Soybean oil exports were 10 times larger in 1955-56 than in 1954-55 while cottonseed oil exports were only slightly ahead, but 1954-55 exports were in large part from CCC stocks while 1955-

56 export sales came out of current output.

CCC also donated large amounts of cottonseed oil to private welfare agencies for overseas distribution to needy persons. Shipments reported totaled 10 million pounds last year compared with approximately 30 million in 1954-55.

• **Lard and Tallow Exports Large**—Lard exports totaled an estimated 645 million pounds in 1955-56—a 4-year peak—25 percent larger than shipments of 516 million in 1954-55 and 59 percent above the 405 million exported in 1953-54. The strong foreign demand for edible fats and oils aided U.S. shipments of lard as well as vegetable oils. Heavy lard exports have been an important factor to the expanding U.S. livestock industry. The competitive price and high quality have been the greatest impetus in keeping U.S. lard moving to foreign markets in increasing quantities. Chief overseas markets for U.S. lard are Cuba and the United Kingdom. Shipments to a number of countries are small because of import controls.

Exports of edible and inedible tallow also established another record in fiscal year 1955-56: 1,330 million pounds compared with 1,092 million in 1954-55 and 1,041 million in 1953-54. Ten years ago exports were 22 million pounds; every year since then has seen export volume mount. Heavy exports have done much to ease the pressure on the livestock industry. Tallow is used principally in the manufacture of soap. With the advent of synthetic detergents in the U.S. and with the steady growth in the U.S. livestock industry, larger amounts of tallow have become available for export. And the rest of the world has been eager to buy U.S. tallow. Competitive price and high quality have been the chief stimulants. U.S. tallow ranks high among the world's cheapest fats. Chief overseas markets are the Netherlands, Japan, Italy, and West Germany.

## • Preserving Supima Quality Stressed

SUPIMA COTTON, the U. S. long staple which is gaining popularity, must reach mills in good condition to hold its markets, Edwin J. O'Neal, New Mexico Extension specialist, emphasizes in recent articles.

Growers and ginners, compressmen and others handling Supima are urged by O'Neal to exercise special care with the cotton so that its high quality can be fully utilized by the mill. The specialist cautioned growers against planting anything except approved seed or permitting other types of cotton to get mixed with Supima.

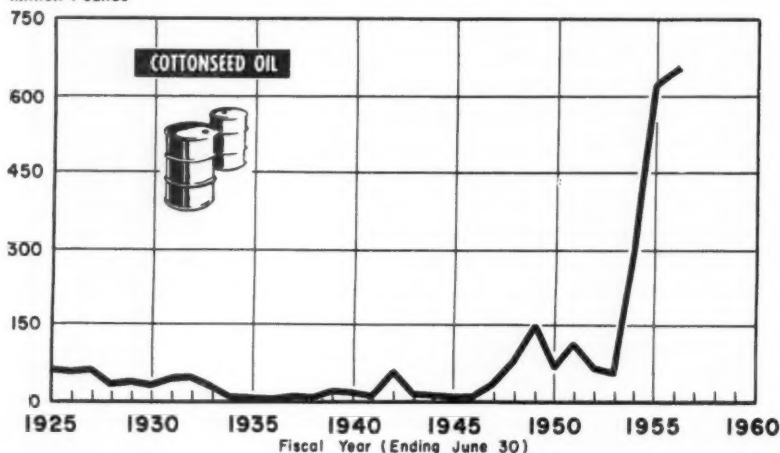
Some Supima, O'Neal added, has reached mills in very poor condition because of improper packaging, handling and sampling, or contamination by oil and grease.

## Ryan, Retired Oil Mill Superintendent, Dies

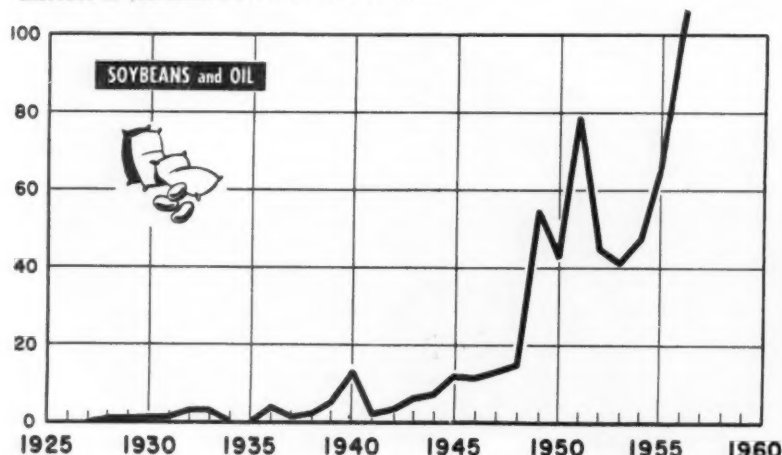
Robert D. Ryan, retired general superintendent for Producers Cotton Oil Co., died Aug. 27 at his home in Fresno, Calif.

He leaves his wife, Mrs. Martha Ryan; two daughters, Sister Robert Maria and Sister Mary Dennis, both members of the Sisters of Charity at Louisville, Ky.; a sister, Mrs. W. E. Miller of Memphis, and a brother, E. E. Ryan of Memphis.

Million Pounds



SPECTACULAR INCREASES in exports of soybeans and oil and cottonseed oil during the past season are shown graphically on these two USDA charts. U.S. exports of oilseeds and vegetable oils were valued at \$400 million, an increase of \$98 million over the 1954-55 total.





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# Principles and Performances of the

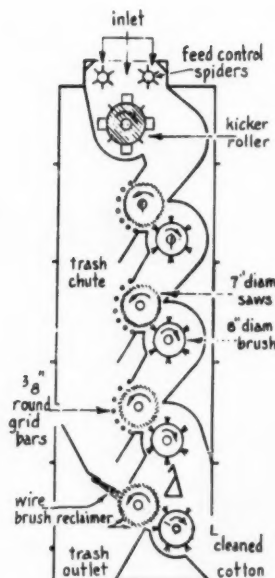


Figure 1.—Cross-section drawing of stick remover.

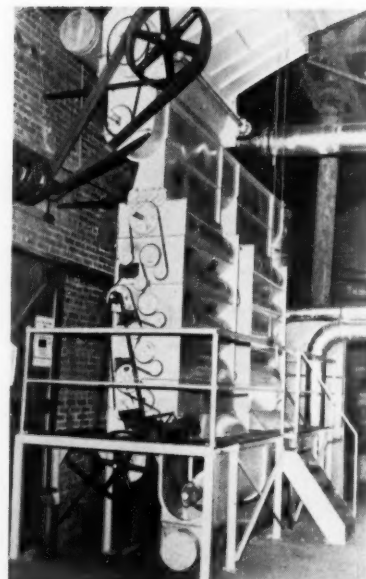


Figure 2.—Two stick removers in 4-80 commercial gin.

## USDA-Developed Stick Remover

A PRELIMINARY progress statement was released on the stick remover development at the USDA Cotton Ginning Research Laboratory, Stoneville, Miss., in 1954, and was supplemented by a published report in 1955<sup>1</sup>. Tabulations from the 1955-56 ginning season tests reported herein have provided further evidence that the principles employed are sound and that the machine is not only effective in removing sticks and stems from cotton, but also does an excellent job in removing other types of foreign material.

The centrifugal sling-off from toothed

cylinders in combination with restraining arcs of small diameter grids, without stripped cylinders, has provided principles that are also as effective in general trash removal as for sticks. Three cleaning saw cylinders in series, each doffed by brushes and a reclaiming saw to prevent cotton loss in the trash, have provided a new and worthwhile machine. Wide applications have been made of the cleaner by cotton ginning machinery manufacturers.

The 1955 ginning season laboratory test results have placed the stick re-

mover in top rank with respect to overall cleaning efficiency. That is to say, the machines applying these principles do an extra good job of removing hulls, motes, leaf particles and fine trash as well as coarser sticks, stems and the like.

The individual stick remover, as a unit and not as a part of other machines, is the subject of this report. This machine is shown in Figure 1 (patent applied for and dedicated to the public). In Figure 2 is shown a commercial installation of the cleaner; Figure 3, cot-

By GERALD N. FRANKS and CHARLES S. SHAW

Agricultural Engineering Research Branch, ARS-USDA

<sup>1</sup> Merkel, C. M., and Moore, V. P. Tips on Ginning Cotton Harvested Mechanically. The Cotton Gin and Oil Mill Press, Feb. 12, 1955.

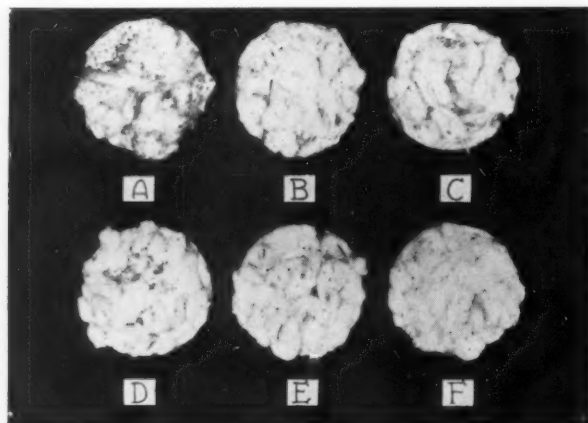


Figure 3.—Machine-picked cotton: A, wagon sample; B, seed cotton after bur machine; C, seed cotton after 7-cylinder incline cleaner; D, seed cotton after 7-cylinder revolving-screen cleaner; E, seed cotton after extractor-feeder-cleaner; and F, seed cotton after stick remover.

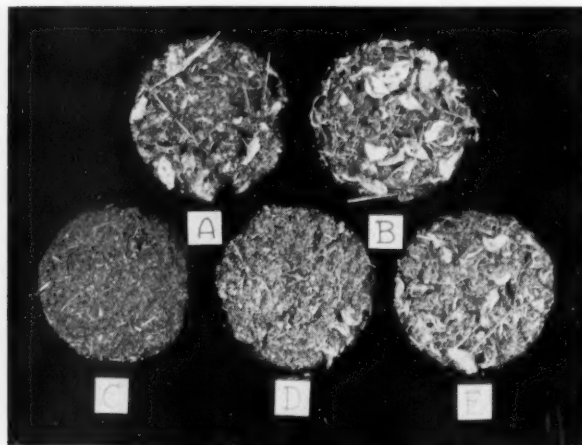
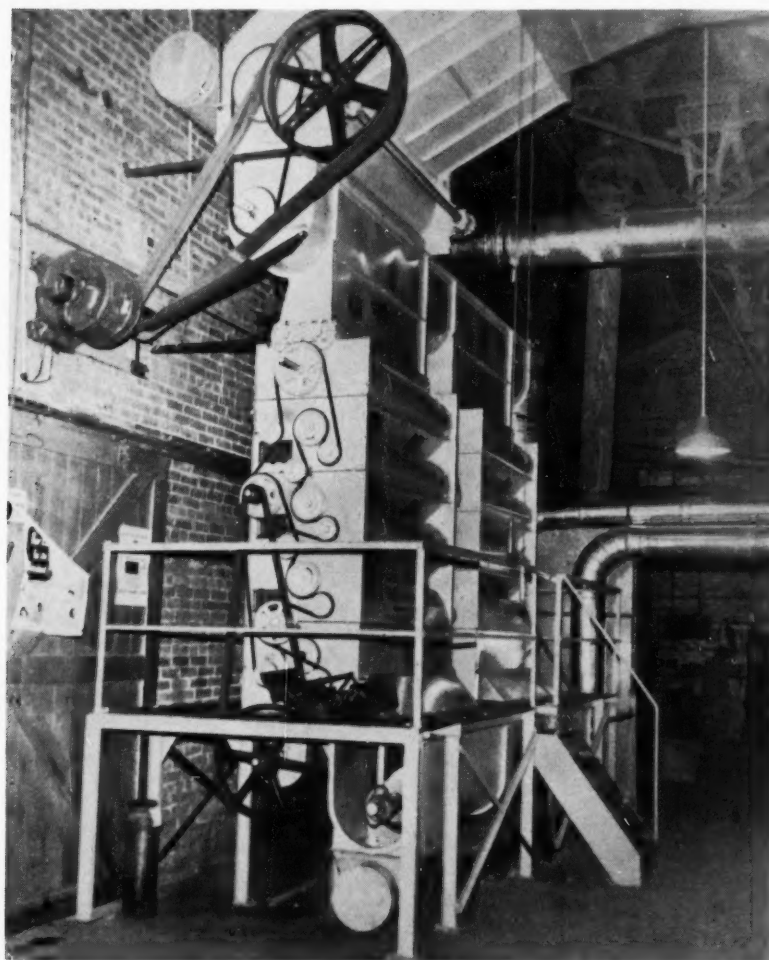


Figure 4.—Machine-picked cotton: A, stick remover trash; B, bur machine trash; C, 7-cylinder cleaner trash; D, 7-cylinder revolving-screen cleaner trash; and E, extractor-feeder-cleaner trash.



We are proud to have been the first to manufacture and install a commercial installation of the USDA designed STICK & GREEN LEAF MACHINE.

Our first installation was in the Sterlington Gin Co., Sterlington, Louisiana, during the 1954 ginning season, for Mr. M. E. Perry.

Our second installation was the one pictured at the left. This installation was made for Mr. J. A. Strain in the Tupelo Oil Mill Gin, Tupelo, Mississippi. This installation was also made in 1954.

## Stick & Green Leaf Machine Developed by USDA

MANUFACTURED (as designed by USDA) BY HINCKLEY GIN SUPPLY CO.

Our initial installation and many subsequent installations have helped to highlight the effectiveness of the STICK & GREEN LEAF MACHINE as an all-round conditioning unit. These many installations have also proven the dependability of the machines from a mechanical standpoint.

Our vast experience gained from actual commercial installations, close association and cooperation with the men who designed the machine, and extensive experimental work in our own plant eminently qualify us to engineer your trouble-free STICK & GREEN LEAF MACHINE installation.

Our production has been stepped up so that we can give immediate delivery on a limited number of installations. May we serve you?

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ton at different stages of cleaning; and Figure 4, types of trash removal.

• **Field Observations** — Field observations of the unit stick remover in operation at commercial gins show that, when properly installed and operated, the machines are giving satisfactory mechanical performance under commercial conditions.

• **Machines Now in Use** — As early as 1954, the machine was showing up so well in cleaning effectiveness that gin machinery manufacturers decided to begin production of the device. Shortly thereafter, while manufacturers made the device according to the exact design developed at the Laboratory, others incorporated the principles in various ways into other types of extracting and cleaning machinery. At the close of 1955, about 175 gins across the Cotton Belt were equipped with machines using the stick remover principles of cleaning. Many more installations have been added since Jan. 1, 1956.

• **Under Development for Years** — Ma-

chine strippers in Oklahoma and contiguous areas were harvesting excessive quantities of brittle sticks and stems along with their cottons to such an extent that cotton gins could not satisfactorily retrieve the cotton. This led to the general research and developmental project for stick removal and cleaning on an intensive scale in 1948 at the U.S. Cotton Ginning Research Laboratory, Stoneville, Miss.

The machine has not come about as an accidental discovery. Much planning, testing, hard work and experimenting have gone into the development of this device. A chain of various types of stick remover machines was designed, fabricated and tested. The earlier machines of this project, however, while quite effective in removing sticks from seed cotton, were heavier and more complicated than the final machine, and lacked somewhat in the desired capacity.

• **How It Works** — The outstanding feature of the stick remover is the centrifugal principle of extraction. This new application of the multiple extractor saw-grid principle involves a set of

round grid bars with rather wide space openings located in a concentric position with each cylinder to facilitate holding the cotton on the revolving saw. This permits acceleration of the seed cotton to the velocity required for effectively expelling the sticks, stems, hulls, leaves, and other foreign matter with a minimum loss of seed cotton. The trash thus slung off through the restraining grid bars by centrifugal force and gravity does not pass through the incoming stream of seed cotton, as in the case in conventional bur machines and extractors.

In this new machine the successive saw cylinders are arranged in a vertical position, one under the other, and suitable brushes are provided to doff the cleaned seed cotton from each of three successive cleaning saws. A reclaiming saw, following the last cleaning cylinder, reclaims any seed cotton which may have been thrown in with the foreign matter by the cleaning saw cylinder. See cross-section drawing, Figure 1.

Standard 7-inch extractor channel saw cylinders are used in the stick remover. A 60-inch saw cylinder length was selected for the machine as being commensurate with gin stand width and as being the desirable safe length limit for small diameters from the standpoint of rigidity at high speeds. Moderate cleaning saw cylinder speeds of 750 rpm in conjunction with doffing brush speeds of 1200 rpm, and reclamer saw speeds of 400 rpm with its doffing brush speed at 1000 rpm are recommended for the gin-capacity model. Five horsepower is required to operate each 60-inch stick remover machine.

• **Cleaning Effectiveness** — In considering the cleaning effectiveness of the stick remover, in comparison with other cleaning and extracting equipment, it should be emphasized that, even though some machines outrank others in total trash removal, each type of commercial cleaning unit has usually been designed to do its best on certain types of trash. Each machine, therefore, when used in combination with other machines in a gin cleaning system, may make a special contribution toward attaining the desired end results.

In general, grid spacings of 1-3/8 inches have been most satisfactory for Oklahoma and similar conditions<sup>2</sup>; while 7/8-inch spacings have been optimum for Central and Southwestern States.

During the 1955-56 crop year a special study was made on hand- and machine-picked cotton in which the stick remover was used as an individual unit with two sets of grid space openings for alternate use, namely 7/8-inch and 1-3/8-inch; which were tested in comparison with various other individual extracting and cleaning machines, including:

1. A bur machine.
2. A 7-cylinder incline cleaner.
3. A 7-cylinder revolving-screen type of cleaner.

4. An extractor-feeder-cleaner.

Three hand-picked and four machine-picked cottons were used in the tests. A.—*Tests on Hand-picked Cottons:* The limited tests on all hand-picked cotton employed the same machines and combinations as are hereinafter described for machine-picked cotton.

In analyzing the results of fractionation tests on the seed cotton samples

Table 1.—Average foreign matter removal efficiency obtained with different machines in handling hand-picked cotton, 1955 crop.

Type and quantity of foreign matter in wagon sample <sup>1</sup>		Proportion of foreign matter removed by the designated machines <sup>1, 2</sup>					
		Stick Remover		Bur Machine	7-cylinder incline cleaner	7-cylinder revolving screen cleaner	Extractor-feeder-cleaner
		3/8-inch grids	1 1/8-inch grids				
Type	Quantity	%	%	%	%	%	%
Hulls .....	1.04	73.8	92.2	72.8	12.6	29.1	81.6
Leaf .....	0.92	32.6	29.3	12.0	40.2	30.4	33.7
Both types .....	1.96	54.1	62.2	43.9	26.5	30.1	60.2

<sup>1</sup> Figures represent averages of 18 samples taken from three hand-picked cottons with six replications per cotton.

<sup>2</sup> **Average Rank of Machines in Foreign Matter Removal for These Particular Tests:**

**Hulls**—No. 1, Stick remover with 1 1/8-inch grids; No. 2, Extractor-feeder-cleaner; No. 3, Stick remover with 3/8-inch grids; No. 4, Bur machine; No. 5, 7-cylinder revolving screen cleaner; and No. 6, 7-cylinder incline cleaner.

**Leaf**—No. 1, 7-cylinder incline cleaner; No. 2, Extractor-feeder-cleaner; No. 3, Stick remover with 3/8-inch grids; No. 4, 7-cylinder revolving screen cleaner; No. 5, Stick remover with 1 1/8-inch grids; and No. 6, bur machine.

**Both Types Trash**—No. 1, Stick remover with 1 1/8-inch grids; No. 2, Extractor-feeder-cleaner; No. 3, Stick remover with 3/8-inch grids; No. 4, Bur machine; No. 5, 7-cylinder revolving screen cleaner; and No. 6, 7-cylinder incline cleaner.

<sup>3</sup> This comparatively clean hand-picked cotton contained no sticks or stems.

Table 2.—Average foreign matter removal efficiency obtained with different machines in handling machine-picked cotton, 1955 crop.

Type and quantity of foreign matter in wagon sample		Proportion of foreign matter removed by the designated machines <sup>1, 2</sup>					
		Stick Remover		Bur Machine	7-cylinder incline cleaner	7-cylinder revolving screen cleaner	Extractor-feeder-cleaner
		3/8-inch grids	1 1/8-inch grids				
Type	Quantity	%	%	%	%	%	%
Hulls .....	2.5	72.8	87.0	71.1	38.6	21.5	85.4
Sticks & stems .....	0.6	46.7	38.3	25.0	28.3	21.7	18.3
Leaf .....	4.5	57.6	38.4	38.1	58.1	48.1	51.9
All types .....	7.6	62.0	54.0	47.9	49.3	37.6	60.2

<sup>1</sup> Figures represent averages of 24 samples taken from four machine-picked cottons with six replications per cotton.

<sup>2</sup> **Average Rank of Machines in Foreign Matter Removal for These Particular Tests:**

**Hulls**—No. 1, Stick remover with 1 1/8-inch grids; No. 2, Extractor-feeder-cleaner; No. 3, Stick remover with 3/8-inch grids; No. 4, Bur machine; No. 5, 7-cylinder incline cleaner; and No. 6, 7-cylinder revolving screen cleaner.

**Sticks & Stems**—No. 1, Stick remover with 3/8-inch grids; No. 2, stick remover with 1 1/8-inch grids; No. 3, 7-cylinder cleaner; No. 4, Bur machine; No. 5, 7-cylinder revolving screen cleaner; and No. 6, Extractor-feeder-cleaner.

**Leaf**—No. 1, 7-cylinder incline cleaner; No. 2, Stick remover with 3/8-inch grids; No. 3, Extractor-feeder-cleaner; No. 4, Impact cleaner; No. 5, Stick remover with 1 1/8-inch grids; and No. 6, Bur machine.

**All Types Trash**—No. 1, Stick remover with 3/8-inch grids; No. 2, Extractor-feeder-cleaner; No. 3, Stick remover with 1 1/8-inch grids; No. 4, 7-cylinder incline cleaner; No. 5, Bur machine; and No. 6, 7-cylinder revolving screen cleaner.

<sup>3</sup> Luscombe, James A. Ginning Research at Chickasha, Okla., 1951-1955. Oklahoma A. & M. College Tech. Bull. No. T-59, April, 1956.



Table 3.—The effectiveness of the Laboratory-designed stick remover in removing foreign matter of various types from machine-stripped cotton.

Types of foreign matter	Foreign matter content of seed cotton before stick remover <sup>1 2</sup>		Foreign matter extracted by the stick remover <sup>2</sup>	
	Pounds	Percent	Pounds	Percent
Sticks & Stems	60.00	3.0	31.1	51.8
Hulls	408.0	20.4	306.4	75.1
Leaf Trash	146.0	7.3	83.8	57.4
Motes	—	—	12.2 <sup>2</sup>	—
Total	614.0	30.7	433.5	70.6

<sup>1</sup> Average of seven replications.

<sup>2</sup> Based on 2,000 pounds of machine-stripped cotton per bale.

<sup>3</sup> The motes in the stick remover trash were separated and weighed, but no measure was made of the motes in the seed cotton wagon sample.

Table 4.—The effectiveness of the Laboratory-designed stick remover in removing foreign matter from snapped cotton.

Types of foreign matter	Foreign matter content of seed cotton before stick remover <sup>1 2</sup>		Foreign matter extracted by the stick remover	
	Pounds	Percent	Pounds	Percent
Hulls	501.6	26.4	455.2	90.7
Sticks & Stems	15.2	0.8	11.0	72.4
Fine Trash	41.8	2.2	12.0	28.7
All Trash	558.6	29.4	478.2	85.6

<sup>1</sup> Two replications.

<sup>2</sup> Based on 1,900 pounds of seed cotton per bale.

which were taken immediately after cleaning by the individual machines, the following over-all cleaning efficiency ranks were obtained: No. 1, stick remover with 1-3/8-inch grids, 62.2 percent; No. 2, extractor-feeder-cleaner, 60.2 percent; No. 3, stick remover with 7/8-inch grids, 54.1 percent; No. 4, bur machine, 43.9 percent; No. 5, 7-cylinder revolving-screen cleaner, 30.1 percent and No. 6, 7-cylinder incline cleaner, 26.5 percent. Further details with respect to the rank of the machines in trash removal efficiency for hulls and leaf are shown at the bottom of Table 1.

**B.—Tests on Machine-picked Cotton:** The results of the tests on machine-picked cotton show that the stick remover and extractor-feeder-cleaner rank highest in over-all trash removal, followed in order by the 7-cylinder incline cleaner, the bur machine and the 7-cylinder revolving-screen cleaner. The over-all trash removal efficiency of the stick remover with 7/8-inch grids was 62.0 percent as compared with only 37.6 percent for the 7-cylinder revolving-screen cleaner. The stick remover when equipped with 1-3/8-inch grids ranked third in over-all trash removal with an efficiency of 54.0 percent as compared with 62.0 percent with 7/8-inch grids and 60.2 percent for the extractor-feeder-cleaner (Table 2).

**C.—Tests on Machine-stripped Cottons:** The cleaning effectiveness of the stick remover in handling machine-stripped seed cotton may be illustrated by the typical results of one test in which 70 percent of the 614 pounds of foreign matter in the bale was removed by this device. An analysis of the foreign matter shows that the machine removed 51.8 percent of the sticks and stems, 75.1 percent of the hulls, and 57.4 percent of the leaf trash (Table 3).

**D.—Tests on Snapped Cotton:** Due to the comparative ease with which hulls and burs are removed from snapped cotton, the stick remover has proved very efficient in the handling of snapped

cotton. In special tests on hand-snapped cotton containing 29.4 percent trash (principally hulls), the stick remover did an effective job of removing 85.6 percent of the trash from the bale (Table 4).

• **Fiber, Spinning, and Nep Tests** — The results of fiber, spinning, and nep tests on representative samples of cotton which were processed through the stick remover show no adverse effects on fiber or spinning quality and no increase in the number of neps in the ginned lint.

• **Position in the Gin System** — Tests run this far indicate that in handling normal machine-picked and stripped cotton not having large quantities of hard locks, the stick remover may be placed near the start of the cleaning system, preceded only by six or seven cylinders of cleaning when used in the Eastern or Mississippi Valley area of the Cotton Belt. In the Western areas, however, where rougher harvesting is practiced in some localities, and in handling cotton heavily laden with bollies and hard locks, it would be desirable to precede the stick remover with a boll breaker and a cleaner to open up the bolls and locks.

• **Capacity of Stick Remover** — Observations at the Laboratory and at field installations indicate that two to three of the 60-inch stick removers have adequate capacity for handling the normal flow of seed cotton required at three- and four-stand gins (either 80's or 90's) in the Eastern and Mississippi Valley areas, depending on the quantity of machine-stripped cotton involved. Two would be satisfactory for machine-picked cotton with normal feed rate, but three may be required if a sizeable volume of stripped cotton is handled, or if fast feed rates are used.

In the Western areas of the Cotton Belt, three stick removers are recom-

mended for a 4-90 outfit, and four would be needed in five-stand gins (either 80's or 90's).

For best cleaning results the feed rate of seed cotton per machine should not exceed 50 pounds per minute input.

## O. J. Jones Promoted to General Superintendent

The promotion of O. J. Jones of Abilene from his post of division processing engineer to that of general superintendent is announced by Ben R. Barbee, general manager of Western Cottonoil Co.

Jones's new position will cover the company's mill operations in Texas, Oklahoma and New Mexico.

Starting with the company while still a student in Abilene High School, Jones now, at 37, has a record of 21 years with the company.

His first job consisted of four parts: janitorial, helping in the laboratory, taking warehouse inventory, and operating the company filling station.



O. J. JONES

This was followed by a position in the laboratory as assistant chemist.

During World War II, Jones served in the U.S. Navy from 1941 to 1946. As a Chief Petty Officer aboard the Battleship U.S.S. New York he saw duty in the Atlantic and Pacific and participated in the battle of Iwo Jima and the invasion of Okinawa.

Returning to Western Cottonoil Co.'s laboratory, Jones remained there until he was put in charge of the construction of the solvent extraction plant for the Abilene mill, the first such plant in Texas. Upon completion, he was made its supervisor.

Following the construction of solvent extraction plants at the company's mills in Pecos and Lubbock, Jones spent three years in Lubbock as superintendent of all solvent plants.

He returned to the General Office at Abilene as division processing engineer in 1954.

O. J. and Mrs. Jones, the former Mary Hermann of Abilene, have three children, David, nine, Craig, six, and Judy, three.

Jones is also vice-president of the International Oil Mill Superintendents' Association.

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(NOTE: Generally, cottonseed oil mill listings in the United States show officers, addresses, equipment and rail location. Many of the other vegetable oil mill listings in the United States, Canada and Latin America also give this information.)

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The 1956 Yearbook of Agriculture has been issued by the U.S. Department of Agriculture and is obtainable from the Superintendent of Documents, Washington, for \$2.50.

Animal Diseases are the subject of the current edition, which contains more than 575 pages of text and illustrations.

**Bibliography Is Released**

A bibliography of material resulting from the Regional Cotton Mechanization Projects has been issued by Rex F. Colwick, coordinator, P. O. Box 175 State College, Miss.

■ R. V. THURMOND, Texas Extension irrigation specialist, is spending three months in South America conducting irrigation schools.

**Presenting**

**Doc R. Oliver**

**Pine Level, N.C.**



DOC OLIVER, Pine Level, N.C., is president of the Pine Level Oil Mill Co. and the 1956-57 president of North Carolina Cottonseed Crushers' Association.

A native of Pine Level, he was born Nov. 14, 1913, the son of Doc Berry and Mary Mitchiner Oliver. He attended public schools at Pine Level and Selma, and then received his B.S. in marketing at North Carolina State College in 1935.

He became associated with W. B. Oliver & Sons, founded by his father, after graduation; and became vice-president of Pine Level Oil Mill Co., a division of W. B. Oliver & Sons, in 1940. He became manager and president of the oil mill upon the death of his father in 1951.

His civic and other activities have included serving 12 years as treasurer of the Baptist Church, four years as street commissioner, member and director of the Lions Club, director of the Bank of Pine Level and as a member of Kappa Alpha social fraternity.

He and Mrs. Oliver, the former Lucile Creech of La Grange, N.C., were married in 1939. They have two children, Judith Rand, 16, and Doc Berry Oliver, II, who is 13 years old.

## Mechanization Conference

(Continued from Page 36)

tected outlets. To some extent they reduce soil losses from the field.

For average terraced cropland at Watkinsville, continuous cotton over a six-year period lost an average of 25 percent of the rainfall. It also lost 27 tons of soil to the acre. A three-year rotation of oats-lespedeza, volunteer lespedeza, and cotton lost 11 percent of the runoff and only one-eighth as much soil. Close-growing cover crops two-thirds of the time were responsible for this.

There must be a proper combination of mechanical measures and vegetation to protect the land and keep it productive. Ground cover can do much to make terracing, contour tillage, and other mechanical measures more effective. But ground cover cannot prevent erosion where implements are operated up and down hill.

In the Blacklands of Texas, near Temple, it was found that on a 3.5 percent slope, when cotton rows were laid out on the contour, the runoff was 4.6 percent of the annual rainfall. But when the rows were laid off up and down the slope, the run off was 13.6 percent of the rainfall. And along with the runoff, the soil loss was 2.5 times greater.

• **New Problems** — Like many other improvements, mechanized farming brings new problems. Farmers who disregard slope of the land and operate plows, harrows, and other equipment up and down hill, encourage severe erosion. Farm equipment manufacturers and dealers have generally recognized this fact and have in many ways contributed to a more widespread use of contour tillage. They emphasize the importance of operating equipment on the contour.

One of the problems in the use of machinery on terraced land has been that terraces resulted in a large number of point rows. This made cultivation with tractor-drawn equipment difficult. During recent years field engineers have given increasing attention to this problem. They have recognized, in designing field layouts for water disposal, that while keeping one eye on the topography of

the land, the other eye needs to be trained on the machinery to be used and the crops that will be grown. The use of more sod waterways and better alignment on terraces offers a practical solution to the point row problem.

Equipment companies are devoting their best efforts to developing machines adapted to the requirements of conservation farming. Notable progress in this regard is the work that has been done on implements for handling sod crops from planting through harvest to land preparation for the next crop. Planters for row crops have been moved up front and consequently make contour tillage much easier. Power lifts greatly facilitate the maintenance of grass waterways and implements suitable for satisfactory terrace maintenance are now available on nearly every farm.

The self-propelled combine is especially adapted for use on terraced fields. Small grains and lespedezas are an important part of the conservation type rotations widely used today. Small combines have made it possible to expand this type of farming. This in turn has made more conservation type rotations possible in the South.

## Fitting Mechanization Into the Production Package for Cotton

By WILLIAM L. GILES, Stoneville, Miss., Superintendent, Delta Branch Experiment Station.

Men, soils, materials, methods, and machines are the components of modern cotton production. Efficient production and profit to the producer result when the components are wisely selected and properly combined.

Two men, the manager and the machine operator, are responsible for packing and wrapping the production package. How neat the package is and how much profit it returns depend on the knowledge, the skill, and the carefulness of these two.

The manager must have an intimate knowledge of the components of production, otherwise he cannot plan the operation. He must plan in detail, else some operations will be improperly timed and some will be omitted. But the best-laid plans of the manager may not work out unless he has qualified machine operators. Too frequently, unskilled, untrained operators are made totally responsible for machines costing thousands of dollars. Experience can be an expensive teacher and not always a good one. Machine performance cannot be expected to surpass the skill with which the machine is handled, nor can a production practice be expected to yield results beyond the exactness with which it is applied.

Turning to the practices associated with cotton production, we find immediately that mechanization involves knowledge in many fields, not agricultural engineering alone. The first example of this association or integration of specialists is found in preparing the land for mechanized production. Engineers and soils men working together determine how much if any land leveling is practical on a given field and what the row arrangement should be.

In the past, too little attention has been given to row arrangement and land leveling in the Cotton Belt. These two

practices provide for the safe removal of excess water and prepare a surface for mechanization. Low places delay land preparation, delay planting, increase weed problems, and keep mechanical harvesters idle when they should be running full force. Land leveling and row arrangement may influence the timing and excellence of each practice, from seedbed preparation through harvest.

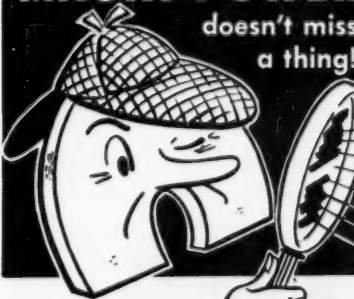
It has been found that some of our most desirable cotton soils in the South have hardpans or plowpans which restrict root development and water penetration. Correcting this condition has been the responsibility of soils men and agricultural engineers in close cooperation.

On a fine, sandy loam soil where a hardpan exists, experiments at the Delta Branch Experiment Station have shown yield increases in excess of 1,600 pounds of seed cotton per acre attributable to deep tillage. Striking as this yield increase is, other benefits resulting from the practice were observed which, on a field scale, might have a profound influence on timing other practices and total efficiency. After rains, surface soil remained wet until excess moisture evaporated. In contrast, rainwater infiltrated the treated plots rapidly, leaving the surface workable several days before the untreated plots could be crossed with equipment.

No benefits can be expected from deep tillage if no hardpan exists. Further, no benefits can be expected unless the practice is applied far enough in advance of the growing season to permit storage of moisture and while the soil is dry to cause shattering of the pan.

• **Must Think Precisely** — Part of fitting mechanization into a cotton-production package is fitting our thinking to the precision production methods of industry. Tractors and multiple-row equipment are the precision tools of the cotton farmer, therefore the accurate spacing and setting of implements on the tractor are essential.

Bedding land prior to planting is an example of an operation performed early in the season which may influence the effectiveness of each practice which fol-



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lows including harvesting. Uniformity of beds in regard to height, shape, and row spacing will have a bearing on weed control throughout the season, whether control be by cultivator, herbicidal oil, or flame. The trash content of mechanically picked cotton may be increased by uneven row middles.

Weed control has long been called the bottleneck to complete mechanization of cotton production. Effective weed control is impossible unless the problem is viewed in its entirety and consideration given to all practices which influence the growth, propagation, and destruction of these pests. Land leveling, bed uniformity, placement of fertilizer, and plant population have a bearing on weed control. Actually, seed treatment and planting dates might logically be listed as weed-control practices, since shade from uniform stands is one of the most effective means of suppressing weeds.

Certainly the weed problem has delayed the adoption of the mechanical picker on many farms in the South where hand harvesting retains labor that may be needed for weed control in the spring. An economic evaluation of weed control in the Delta revealed that chemicals reduced the labor requirement for weed control by 70 percent. Where chemicals and cross plowing were combined, hoe labor was reduced by 80 percent.

Under the conditions of these experiments, cost of control by hand methods was slightly less than by chemicals or a combination of chemicals and cross plowing. If the consideration of extending mechanization to weed control ended here, one would be forced to conclude

that chemical weed control or a combination of chemical weed control and cross plowing is not profitable. But consideration of the problem does not or should not end here. In the study just cited, full mechanization, including machine harvest, reduced production costs by \$38 per acre and increased returns by more than \$25 per acre. Mechanical harvesting became feasible because weed control could be accomplished by a small resident labor force where the labor-saving method is used.

Here is an excellent example of the interrelationship of two seemingly dissociated practices. Here, too, is an example of the false conclusions which may be reached by viewing mechanized production piecemeal.

Increasing costs of equipment, materials, and labor, coupled with reduced cotton acreage, have forced producers to consider methods for maintaining per-acre yields at high levels. In many cases irrigation has been the answer. However, profit from the use of irrigation is dependent on the wise and careful integration of other components of production. Experiments have shown that irrigation may be unprofitable or may actually result in decreased yields where insect control is poor, where low rates of fertilizer are used, or where an unbroken hardpan exists near the soil surface.

Mechanization is a part of every parcel in the cotton-production package. In many cases it is the link which unites the separate but interrelated practices.

Speed gained through complete mechanization makes better timing of operations possible and extends labor. Mechan-

ization presents our chief hope for making American cotton competitive price-wise with synthetics and foreign production. In order to reap fully the benefits which mechanization offers cotton, we must be aware that all segments of production are interrelated. Only through complete integration can a perfect whole be formed.

#### Panel Discussion:

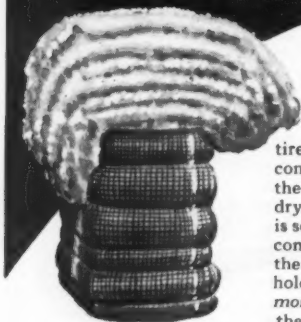
### Boosting Farm Know-How

LEADER: DAVID S. WEAVER,  
Raleigh, Extension Director,  
North Carolina.

The job of boosting know-how in cotton production is never ending. It is a constant process, and calls for regular re-appraisals of our major problems and opportunities.

Among the problems which tend to hold back progress in cotton production are the following: (1) Small acreages per farm in many areas—a situation which particularly holds back mechanization progress in the Southeast; (2) the high cost of mechanization; (3) low yields per acre in some areas; (4) the reluctance of farmers to let tenants go because some operations, especially weed control, have not been completely mechanized; (5) limitations in credit because of low farm values in some areas; (6) the need for more adequate training of machine operators; (7) the need for machines that are better adapted for use in some areas of

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A PANEL DISCUSSION on Boosting Farm Know-How was one of the highlights of the Conference. Participants shown here, from left to right, are William N. Downs, Macon, Ga., First National Bank & Trust Co.; M. R. Powers, Columbia, S.C., Columbia Farm Equipment Co.; David S. Weaver, Raleigh, director, North Carolina Extension Service, panel leader; W. L. Martin, Guntersville, Ala., County Agent; and I. R. Anderson, Sandersville, Ga., cotton farmer.

the Belt; (8) the need to equip more gins for handling machine-harvested cotton, particularly in the Southeast.

These are among the problems that will be considered by this panel — problems in boosting farm know-how — problems that will be reviewed from the standpoint of an individual farmer, an implement dealer, a banker, and a county agent.

**Farmer: I. R. Anderson, Sandersville, Ga.**

I operate a 450 acre farm in Washington County, Ga. Last year I had 106 acres in cotton, 28 acres of wheat, 100 acres of oats, 60 acres of pasture for hay and beef cattle production. I have one full-time worker, and hire several part-time laborers on a temporary basis. That means I have to depend on machinery for most of my help, and it's the best help I ever had. It can do more and better work for less money than any hired hand I have ever had. If you take care of that equipment it will last a long time and give trouble-free, economical service.

The first time that I tried a tractor was in 1938. It was a large one with small horsepower, and I didn't buy it. The first time I ever saw an all-purpose farm tractor was in 1939, and in 1940, I bought one — on credit, of course. But this tractor made it possible for me to pay off the debt, not only on the tractor

but on the farm as well, by 1943. That same year, I purchased another tractor and a combine.

The average yield of cotton on my farm was 165 pounds at the time I bought it. But I started a rotation of small grains, followed by peas and soybeans, and my yields began increasing year by year.

I purchased a 30 horsepower tractor and a 6-foot combine in 1945. I paid for this in cash. Machinery had helped me get out of the credit class.

In 1950 I got my fourth tractor. It was a big improvement over that old 1940 model, and this improvement in machinery continued to improve the yield of crops down on the farm.

In 1952 I purchased a 12-foot self-propelled combine which had a straw chopper to cut all straw as it came out of the combine. The use of this chopper made it possible to mix all the chopped straw and litter into the soil. This has helped increase my wheat yield to 50 bushels per acre, my oats to 100 bushels per acre, and my cotton to 750 pounds per acre.

In mechanizing my farm, I have not sacrificed good farming practices. I have followed advice of my County Agent and SCS in rotating my crops and planting soil building legumes. My entire farm is terraced according to specifications. I cultivate on a contour. I use all my acres.

Like other cotton growers, I am wondering about the future of our crop. We have always satisfied ourselves by saying we have the best and strongest fiber known to man. This has been true in the past, but now we sometimes wonder after seeing rayon, nylon, orlon, and other fibers fast taking the place of our cotton goods.

To meet the ever growing competition, the cotton grower must produce a better fiber and produce it at lower cost. To do this, he must start early in the game. On my farm I start by selecting a variety that will produce the staple which is adapted to my conditions and in demand by the spinners.

Other steps which I follow to reduce costs and produce quality cotton are:

1. Cultivate the crop clean to keep down weeds and grass. By keeping the crop clean you do not get as much stained cotton and will be fairly free of trash and weed seed.

2. Follow systematic insect control program.

### Exports of Soybeans Goal of New Plan

USDA and the Soybean Council of America, Inc., have agreed upon a program to develop markets for soybeans and their products in foreign countries. Plans call for surveys of possibilities for developing new markets in Italy, Spain, Western Germany, Austria, France, Finland and other countries to be determined later. Foreign currencies available through Public Law 480 will be used in the program, as this law provides that a portion of such local currencies received in payment for U. S. farm commodities may be used to develop new markets for these products.

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3. Pick cotton when well open and dry — as free of trash as possible.  
4. If cotton is stored, I make sure it is dry and do not pack it.

5. I take my cotton to a good gin.  
In closing, I would like to make a recommendation: That continued work be done to provide better adapted, less expensive mechanical pickers, because it is costing me and other farmers in this area about one-third of the crop to harvest by hand. In my belief, this would go far toward solving one of the big problems of the cotton growers in this area.

**Farm Equipment Dealer: M. R. Powers, Columbia, S.C., Columbia Farm Equipment Co.**

Farm equipment dealers face a real problem today in helping cotton growers mechanize their farms for greater efficiency.

All of us need sales badly. And the

grower, who is being pinched by acreage controls and lower income, is shopping around among many dealers to see where he can get the cheapest possible price.

This is an unhealthy condition in that many sales are made where dealers do not realize enough profit to properly service and instruct the new owners in the best and most economical operation of the new machine. This often results in dissatisfaction and costly repairs for either the customer or the dealer. And this one thing can do as much as anything to hold back the proper application of machines to specific operations in the cotton mechanization program. A new planter on the farm, improperly set up, can mean the difference between profit and loss at harvest time. The way a cultivator is set up and used can mean the difference between an expensive hoe bill or a small one — or maybe a grade difference in lint, particularly where mechanical pickers are used.

The proper selection of tools to perform a particular operation will vary from one section of the Cotton Belt to another and in some instances it will vary in the territory served by one dealer.

Let's consider the mechanization problem of the Piedmont farmer who plants one to 10 acres of cotton. On the surface we might say he should buy a small tractor, small plow and harrow, one-row planter and cultivator, and six-row duster. But if he plants only five acres of cotton, his equipment alone would be over \$600 an acre, and one doesn't have to be an economist to know that he cannot afford such an outlay for his small cotton acreage.

The one and only answer is diversification and this, in my opinion, is where farm equipment dealers and manufacturers have contributed the most to the cotton mechanization program as we know it today.

The mechanical cotton picker has played a very important role in cotton production, and I certainly would not like to take any credit away from those who worked so long and hard to develop it; but in my opinion these same people or manufacturers did an even better job of designing, engineering and developing diversified machinery to operate on diversified farms.

Take the basic unit, which is the tractor. This one machine, and in many cases the same machine, can be used for every operation on the farm. In the production of cotton the one tractor prepares the land, plants, cultivates, poisons and provides power for mechanically picking the crop. This same machine, with modifications, can be used for corn, peas, beans, hay crops, vegetables and many others. This alone has been the survival of the small cotton producer — and in some cases — the middle-size and large cotton producer as well.

In the past, the farm equipment dealer has contributed to the cotton mechanization program by showing the need to the manufacturer for multiple-purpose machines. He undoubtedly has helped considerably in suggesting to his farm customer the selection of proper size tractors and implements for his particular farm.

The dealer's first step in helping his farm customer is to assist him in making a careful farm machinery analysis for his present and future needs.

A farm analysis should, first of all, include the present implements owned by the farmer, his future needs and the trends in the type of farming he is conducting. For example, the trend with larger farmers in our area is for big four-wheel diesel tractors for land preparation. Most large farmers can use one or two of these tractors to good advantage; they can prepare the seed bed cheaper and faster, particularly where one crop immediately follows another. Undue delay between grain and beans can mean a complete failure.

In buying new equipment, the farmer should demand, and the dealer should insist that he buy, equipment which is modern in every respect. A "new" tractor, but an "old" model bought at a cheap price, is false economy if within a short time it cannot mount new cultivators and planters. Old model tractors can find a home among those farmers or industrial users who use them only for draw bar work.

Almost every new machine requires special servicing for cheap, long life per-

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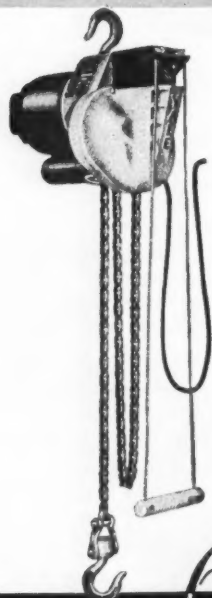
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## ■ Brief . . . and to the Point

J. M. ELEAZER, Clemson, S.C., Extension Service, recently discussed the value of irrigating cotton even in good years in areas of high rainfall. He said:

"Irrigated cotton at Clemson in 1955 (one of the best cotton years in a long time) made 357 additional pounds of seed cotton per acre. The year before, which was really dry, irrigation gave an increase of 1,212 pounds of seed cotton; and during 1953, moderately dry, the increase was 655 pounds per acre."

formance. A farmer using a diesel for the first time should be properly schooled in the correct oil, proper fuels and the importance of keeping both clean. In addition, he should have a systematic schedule for changing oil and greasing machines as well as a system for repairing equipment in advance of the season in which it is to be used. If a dealer fails to help his farm customer with these operations, he is doing him a great injustice.

Machines must be properly set up and adjusted to perform best. The man who operates the tractor and equipment is the first man who should receive instruction. Many times, this is not the owner—but the owner also should be instructed in order to properly supervise the operator, or in case the operator is changed.

It is extremely important for both the customer and the dealer to pass on to the manufacturer any changes or improvements needed on existing production equipment. Frequently the manufacturer assumes the machines are performing satisfactorily unless he receives suggestions or criticisms from the field.

Banker: William N. Downs, Macon, Ga., Vice-President, First National Bank & Trust Co.

Our bank is located right in the heart of Georgia. We have been called on for many years to furnish capital for the mechanization of farms and for the production of cotton, as well as other crops and livestock. Loans have been made direct to farm customers and through equipment dealers. By working with numerous correspondent banks who need our help, we have supplied credit in excess of local bank limitations. In order to do an effective job on a sound basis, we have always tried to be alert to the constant changes in requirements and conditions. Our system necessarily has been flexible. A case study, involving two young men who operate as partners, will illustrate how our bank serves the credit needs of cotton growers.

The two young men have learned how to farm well. They have made credit a tool instead of a burden.

Their farm in 1949 contained 1,200 acres, with 550 acres in cultivation. In 1951 they purchased an adjacent tract of 400 acres, making the total since that time amount to 1,600 acres, with 650 acres in cultivation.

Principal crops are cotton, peanuts, small grain, peas, and soybeans. They also have some beef cattle. The cotton acreage over the period under study ran from a low of 30 acres to a high of 70

acres and stands at 43 acres for the current year.

Yields on cotton ranged from a low of 32 bales on 55 acres in 1954, the dry year, to a high of 88 bales on 61 acres in 1953. The drouth year of 1954 was the only one when the yield was less than one bale per acre. Other crops produced above average yields in all years.

Gross farm income ranged from a low of \$20,000 in 1949 to a high of \$40,000 in 1953. Projected income for 1956 is \$32,000. Net worth has increased from \$48,000 in 1949 to \$54,000 in 1956.

Since 1949 these fellows have bought a total of \$20,000 worth of equipment. Purchases included such items as a peanut picker, tractor, truck, drying equipment, a self-propelled combine, and a mechanical cotton picker. Credit to make these purchases was supplied by our bank. The buying was not done all at one time. Instead it was scheduled over the whole period of time from 1949 up to date as the need and the financial position justified. Credit for labor expense was reduced from \$4,000 to \$1,000 annually.

Here is an interesting point to me. All financing required to get the necessary equipment was handled direct with these farmers. They never gave a dealer notes on anything. This arrangement placed them in the unique position of being able to trade on a cash basis and usually afforded an attractive discount of 10 percent to 30 percent.

In most instances the whole purchase price was covered by loans from our bank. This was done by consolidating all credit needs for operating expenses and equipment buying into one credit line. That portion of the loan used to get the equipment was set up for payment in instalments extending over not more than two seasons. Maturities were set at a time when these customers had something to sell. I am glad to be able to report that all credit for the purchase of equipment has been paid in full.

As an example of the planning that these fellows did, I think you might like to know what they did when they decided to buy the cotton picker. This was

in 1952, when the cotton acreage planted was 70 acres. In the late summer of that year, these customers were convinced that the farm labor situation would definitely make their harvest of the cotton crop extremely difficult and also very costly. They estimated the harvest expense would be about \$4,000. The mechanical picker could be bought for \$7,500 net after a 15 percent discount for cash.

They came to us with their proposition, explaining the cost and the saving that could be made by the use of the cotton picker. With this machine the picking expense, they estimated, would be reduced to \$1,000. We then asked if they could apply this saving of \$3,000 on the cost of harvest toward the payment of the loan made to buy the machine. They agreed that they could.

We advanced the \$7,500 and set \$3,000 to be paid in the fall of that year. The balance of \$4,500 was divided into two equal instalments and was paid out in the following two seasons. The total credit advanced each year ranged from \$7,000 in 1949 to a high of \$25,500 in 1952. Loans approved for the current year run to a total of \$15,000.

These customers are unusually good operators. They are cost conscious and strive always to make their time and money productive. Their plan of operation is flexible to give them the most for what they have. Purchases of equipment are confined to justified needs in relation to productive capacity.

County Agent: W. L. Martin, Gunterville, Ala.

County Agents see the need for greater mechanization. We consider this another challenge for us, and are working with other groups to help farmers understand and exploit the possibilities for further mechanizing the farms in our area.

Most farmers in my area consider their farms to be mechanized. They are thinking about equipment such as tractor, turning plow, harrow, planter and cultivator. County Agents and equipment dealers have provided farmers with tech-

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nical advice in moving thus far in this direction.

We have spent a great deal of time during the past 10 years in demonstrating and advising farmers concerning the proper use of these items of equipment. Excellent progress has been made and farmers in general are well pleased with this progress. They have increased their yields, are handling more acres per man, have reduced the cost of production, and have diversified their farms.

In recent years, a great deal of time has been devoted to demonstrating and advising farmers concerning the use of land levelers, cultipackers, rotary hoes, pre-emergence and post-emergence chemical weed control, thick-spacing, insect control and cross cultivation. These practices have proved to be time saving and in some cases to lower cost of production. For example, the rotary hoe has proved to be a valuable piece of equipment. The proper use of a rotary hoe has reduced hand hoeing 50 to 75 percent. It has also been used to scarify the land after hard rains. This is an aid in obtaining a stand in our area. The rotary hoe must be used frequently and is most effective when used as the weeds begin to emerge.

Many farmers we have worked with in my county have used rotary hoes for a number of years. They have been highly pleased with the results. The success of these farmers has been used to advance the use of rotary hoe to other farms.

County Agents constantly present new practices and ideas to farmers. In doing this we have found that demonstrations on cotton farms are an effective way of getting new ideas and practices accepted on a large scale. We also find it advisable to arrange visits to the sub-experiment stations, to study research work being conducted on cotton mechanization and to visit mechanized farms in our county or other nearby counties.

Farmers in my particular area have not harvested much of their cotton mechanically, but we are looking ahead to the time when most of the cotton will be harvested in this way.

Some of our demonstrations are already set up with mechanical harvesting in mind, such as selection of land, chemical weed control and thick stands (40,000 plants per acre). There are other practices that will have to be brought into the picture, such as varieties, cultivations, and maybe defoliation.

It will be essential that the harvesting machine be properly adjusted and operated. This, within itself, will be a rather large job for County Agents, specialists in farm mechanization, and farm machinery dealers. But by working together in conducting schools and demonstrations, and by working closely with the operators, I know that this can be handled.

As more cotton is machine harvested, it will be necessary for additional improvements to be made with gins to

properly handle the cotton. We will continue to work with the ginners. We will keep them advised as to progress farmers are making toward harvesting their cotton mechanically so they can make the necessary changes and adjustments in their operations.

As we make progress in mechanization, we will constantly be facing new problems. County Agents, along with related specialists and farmers, will help analyze these problems as they arise and then plan a course of action based on research information available, and research work in progress, as well as the experience of successful farmers. We will continue to advise, demonstrate and assist in every way possible to develop a sound program that will prove profitable to the cotton farmers.

#### Panel Discussion:

### **Cotton Mechanization Research Needs**

LEADER: R. R. POYNOR, Chicago, International Harvester Co.

Lowering of production costs is one of the most urgent needs of the cotton industry. It is the only way that cotton can meet price competition from synthetics and foreign cotton producers, and at the same time give American growers a much-needed increase in their net incomes. Mechanization is one of the great opportunities for reducing production costs, but we obviously need a great deal more research in this field before we will be able to fully exploit the potential of mechanization for strengthening cotton's competitive position. The purpose of this panel is to help pinpoint some of the biggest needs for mechanization research — and thus to point the way toward faster progress in reducing production costs in the years ahead.

**Cotton Breeding:** J. Winston Neely, Hartsville, S.C., Vice-President Coker's Pedigreed Seed Co.

Most of the research work on the breeding of varieties for spindle-picking has been concerned with leaf pubescence or with pickability.

S. L. Calhoun, formerly of USDA's Bureau of Entomology and Plant Quarantine, has made a very thorough study of the relationship between leaf pubescence and the percentage of foreign matter in seed cotton and in lint produced by different varieties of cotton. He has shown that the percentage of foreign matter in lint cotton was 8.2 and 2.7 for the most hairy and least hairy varieties, respectively, when the plants were not defoliated and picked mechanically. The percentages were 6.5 and 2.5 when the plants were defoliated. The two cottons are non-commercial varieties, and are not grown because of low yields.

The leading commercial varieties, according to Calhoun, are characterized by approximately the same amount of hairiness and the percentage of foreign matter of the commercial varieties included in the study ranged from 4.6 to 5.7 for defoliated, machine-picked cotton. There were one and one-half grades difference between the smooth-leaf, non-commercial cotton and the best grade commercial cotton when the plants were defoliated and mechanically picked.

Plant breeders have realized the potential value of the smooth-leaf character-

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**MECHANIZATION RESEARCH** was discussed by this panel. Left to right are Fred A. Kummer, Auburn, head, agricultural engineering department, Alabama Polytechnic Institute; A. W. Snell, Clemson, S.C., head, agricultural engineering department, Clemson College; R. R. Poynor, Chicago, International Harvester Co., panel leader; C. D. Tuller, Atlanta, C. D. Tuller Cotton Co., who presided at the session; John R. Carreker, Watkinsville, Ga., superintendent, Conservation Experiment Station; and Dr. J. Winston Neely, Hartsville, S.C., Coker's Pedigreed Seed Co.

istic in adaptation to mechanized production. Calhoun, through the Delta Experiment Station, has made seed stocks of the smooth-leaf cotton available to cotton breeders for hybridization. More recently seed of other smooth-leaf strains have been released by the Delta Station and other research agencies. Several breeders now have progenies of crosses involving these cottons in their breeding nurseries. It is the opinion of most of the breeders who are attempting to isolate improved cottons from such crosses that invariably the smooth-leaf progenies are late maturing and unproductive.

Tests of picking efficiency were conducted with 10 varieties at the Delta Branch Station in 1948. The percentage of cotton picked in the field by spindle pickers varied from 85.7 to 94.7. The differences probably were too small to be significant.

In similar tests conducted in 1955, machine efficiencies ranged from 91 percent to 95 percent and composite grades from 91.0 (S.L.M.) to 96.9 (S.L.M.), with most of the varieties grading around Strict Low Middling. The varietal differences in the tests are not considered significant. Those who conducted the tests are of the opinion that there is more difference within varieties at different stages of maturity than between varieties at approximately the same stage of maturity.

Workers at the Texas Experiment Station have studied the adaptation of cotton varieties for several years and have designated the following as stripper-harvesting varieties: Macha, Stormmaster, Stormproof No. 1, C. A. 119, C. A. 122, and Blightmaster. Most of these varieties are characterized by semi-cluster growth habit, stormproof bolls, and short, coarse fibers.

H. P. Smith of the Texas Station has emphasized the fact that storm-resistance is a desirable characteristic for any method of harvesting and especially for machine-stripping. He also has stated that a good root system will aid in preventing a stripper from uprooting plants, as will a fairly thick stand of plants which prevents a "limb-crown" near the ground.

There are many characteristics that indirectly affect the adaptation of a variety to mechanical harvesting. For example, breeders at the U. S. Cotton Field

Station at Shafter, Calif., are selecting for characteristics that speed up ginning operations since the tremendous rush of the harvest season always causes a jam with trailers at the gin. Experimental strains with six to eight percent linters on the seed gin 20 percent faster than normal Acala 4-42 with 12 percent seed fuzz. Consequently, low linter content is definitely considered a characteristic that would make a variety better adapted to mechanical harvesting.

Cotton varieties, to be adapted to mechanized production, must be high yielding. This means that they must be resistant to diseases and able to stand up, better than the average variety, under unfavorable weather conditions. If mechanized production means the "dumping" of large quantities of short staple or poor quality cotton on the market its purposes will not be realized. The breeder cannot sacrifice yield and quality in developing cotton varieties that lend themselves to mechanized planting, culture, and harvesting. In fact, improvements in yield and quality would make mechanized production more efficient and more profitable.

Research during the past 25 years has resulted in a better understanding of the effect of varietal characteristics upon adaptation to mechanical production. Definite progress has been made in developing varieties that are adapted to machine-stripping and breeders have released many varieties that are quite well adapted to harvesting with spindle-pickers. However, we have only scratched the surface.

Far too little attention has been paid to the characteristics that would make varieties better adapted to precision planting, treatment with pre-emerge herbicides, flaming, and defoliation. Every effort should be made to greatly expand the research along these lines.

We need to know much more about the relationship between plant or boll characteristics and pickability, pubescence and trash content, fiber properties and cleanliness, and between all characteristics that are conducive to mechanical production on one hand and the agronomic and quality characteristics on the other hand.

Further improvements of varieties for mechanical production is being held back because of a lack of knowledge regarding the relative effects of genetic factors

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and environmental influences upon the major characteristics affecting adaptation to machine culture and harvesting.

Cotton breeders have not been able to consistently obtain significant differences in pickability and in other characteristics in variety-picking tests. Consequently there is an urgent need for research designed to develop experimental techniques for conducting these tests.

Many characteristics which would make cotton better adapted to mechanization may not exist in upland cotton but can be found in other species. There is an urgent need for an expansion of the research programs in which these forms are being collected; assembled in nurseries; studied taxonomically, morphologically, and genetically; and the desirable characteristics combined into breeding stocks that would cross readily with the existing high-yielding, high-quality varieties.

**Preparation, Planting, Fertilization:**  
John R. Carreker, Watkinsville, Ga.,  
Superintendent, Southern Piedmont  
Conservation Experiment Station.

The fact that cotton is produced mostly on sloping land throughout Georgia and the other Southeastern states affects to a very large degree the needs in land preparation, planting and fertilization.

Cotton is conducive to soil erosion and depletion while it occupies the land, and this can be expensive. Our research indicates that for each inch of topsoil lost through erosion, there is generally a reduction in yield of about 100 pounds of seed cotton per acre. This is a toll paid every year for the past folly of permitting soil to be carried away through erosion.

Cropping treatments have a marked effect on run-off and erosion losses. Some kind of sod crop is required in sequence with cotton on most of the fields in this area, and we urgently need research to develop tillage, planting and fertilization techniques that will help retain the protective benefits of a sod after it is destroyed for a row crop like cotton.

During recent years, investigators at several locations have used various implements and techniques to prepare seedbeds for row crops and leave a large portion of the crop residue on the soil surface. This practice has been called "mulch farming," "mulch tillage," "stubble mulching" and similar names. Reduced run-off and erosion were the chief benefits accruing from such a practice. However, a number of problems were encountered, and some have not yet been solved.

Field scale tests of "mulch farming" were conducted at the Southern Piedmont Experiment Station over a six-year period. This period covers two complete cycles of a three-year rotation consisting of:

1. Wheat followed by Kobe lespedeza
2. Wheat and Kobe lespedeza
3. Cotton

Only seed were harvested from the crops of wheat and lespedeza; all straw and leaves were on the soil. The wheat and lespedeza residues were broken out for cotton each year in the following manner:

1. Ripping eight inches deep, leaving most of the residue on the surface as a mulch.
2. Discing three inches deep, leaving a large portion of the residue on the surface as a mulch.
3. Turning five inches deep, burying most of the residue, but leaving a small amount on the surface.
4. Turning eight inches deep, burying all the straw.

The yields of cotton, wheat and lespedeza over the six years were not significantly different for the four treatments. Stand differences from year to year had the greatest influence on yield of the cotton.

Run-off and soil losses were measured on plots of seven percent slope during a five-year period, using a similar three-year rotation containing:

1. Oats, followed by Kobe lespedeza
2. Lespedeza
3. Cotton

The land was prepared for cotton by

turning under the oat straw and lespedeza on one series of plots and ripping the soil to leave the straw on the surface of another group. Results showed some saving of soil and water, but at the expense of 11.5 percent reduction in cotton yield. This loss in yield was caused by less stand due to poorer germination in cloddy soil where the stubble was ripped.

Cotton was grown continuously without crop rotation on similar plots. Much higher soil and water losses and very low crop yields resulted from this practice.

Other rotation practices were studied where cotton followed tall fescue grass sod. The fescue material was observed to be very durable in the soil. The quantity of plant material in the soil was measured Aug. 15, 1952, in cotton with three different cultural practices. The material present to the seven-inch plow depth for the different practices was:

Cotton continuously, 2.05 tons per acre.  
Cotton after two years of lespedeza, 4.85 tons per acre.

Cotton after three years of fescue, 8.75 tons per acre.

The distribution of this plant material was fairly uniform throughout the soil profile.

Tillage methods and tools that will retain plant material on the soil for surface protection is the major need in land preparation. The studies cited above point the way, but much work needs to be done yet. The tillage process should develop the following conditions:

1. A good crumb structure in the soil to promote rapid plant growth.
2. Dead plant material distributed over the soil surface in such manner that it will resist erosion and not interfere with planting and cultivating operations.
3. Surface conditions conducive to preventing weed growth.

Planters and planting methods are needed that will place the seed and fertilizer in the soil to:

1. Obtain uniform stands quickly.
2. Leave the row and middle in condition for effective weed control operations.
3. Retain the surface mulch of dead plant material.

4. Reduce tillage costs.

A nitrogen tieup giving reduced yields with mulch tillage has been noted by some research workers, but has not been apparent in our studies.

Fescue sod was prepared for cotton and corn in a series of studies during 1954 and 1955 by:

1. Turning the sod under completely with a moldboard plow.
2. Killing the sod with a disc harrow and leaving most of the plant material in the soil surface.

Nitrogen treatments were superimposed on these tillage practices to give varying amounts of nitrogen in the soil surface versus in the bottom of the furrow slice, and early application versus normal time of application. All plots received fertilizer applications of 500 pounds per acre 0-12-12 broadcast ahead of planting and 500 pounds per acre 4-12-12 in the row at planting. A slightly higher average yield was obtained with the mulch tillage, but differences were not statistically significant.

The surface mulch interfered to some extent with planting and cultivation. The surface mulch was destroyed during the cultivating operations. Equipment and operating techniques need to be worked out for handling the mulch material more effectively, and to eliminate cultivation operations.

The placement of the fertilizer mate-



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rials in relation to the mulch should be studied more thoroughly. Decomposition of the mulch should not be hastened with either tillage or fertilizer. The objective should be for optimum growth of the cotton with minimum destruction of the plant residue on the soil surface.

**Production Equipment:** A. W. Snell, Clemson, S.C., Head, Agricultural Engineering Department, Clemson College.

To get a fair representation of important research needs in production, a poll was made of the several members of the Experiment Station and Extension staff working with cotton production in South Carolina. Their reactions helped to pinpoint some of the research needs, although relative importance varied considerably.

There are a lot of operations between the planting of cotton and harvesting and in no case can the machinery and techniques of any one be accepted as ideal.

The need for guaranteeing a stand, in a completely mechanized operation, definitely needs research. Chopping cotton to obtain desired stand is, and must be, on its way out. Is the answer mechanical, chemical, or thermal? What about the possibility of electrical or some other form of energy not yet found successful in thinning cotton? Regardless of the method, equipment and/or techniques must be developed to guarantee a stand in a completely mechanized operation.

Another item that must be pinpointed for research in cotton production is, without a doubt, weed control.

It is difficult to put too much emphasis on the importance of weed control relative to efficiency of harvesting machinery, quality of cotton, as well as total yield produced.

Progress has been made in weed control. The application of pre-emergence chemicals with sweep cultivation has reduced much of the hand hoeing formerly required. But, until the chemist develops a chemical to kill every plant but cotton, we must improve on weed control equipment. And, even if such a chemical is developed, then equipment and techniques for applying the "wonder drug" will require research by agricultural engineers.

We will continue to need improvements in insecticide equipment — that is, unless the entomologist develops the "one-shot" insecticide, one application for the entire season, or the agronomist develops the cotton with a taste obnoxious to the boll weevil. Otherwise, the problems center around efficiency and effectiveness — getting the most for the amount invested. For early and mid-season application, research needs should center around improving present equipment and developing better and simpler techniques. For late season insect control, which is vitally needed to materially increase the cotton yield, new equipment is definitely needed.

Controlling the weevils for longer periods of time, and particularly late in season when migration begins, is important. If weevils could be controlled during migration, thus extending the fruiting season at least a month, the potential yield increase would be terrific.

Assuming that defoliation is, or will continue to be, a desirable practice, then again the problem is getting equipment into the fields and applying a defoliant at the proper time and place.

A better defoliant, or better technique

for applying the material under the hundreds of different conditions encountered, is certainly desirable.

Research aimed at environmental control might be construed to mean any item not yet covered in this paper. Temperature control might some day be as feasible as weed control. But, it is generally considered at present that we depend on nature and take what comes with respect to temperature, humidity, wind movement, light, and to some extent soil condition. Available moisture was formally dependent upon rainfall alone, but now irrigation is rapidly moving into the picture.

Research on the irrigation of cotton is attracting widespread interest in the Southeast. Everyone will agree that a thirsty crop needs water, so there is no doubt of irrigation producing a better

crop when a prolonged drouth exists. But, how long a drouth?

The techniques of getting the highest yield practical for the least output, and at the same time utilizing all other environmental factors to the utmost, involve many unanswered questions.

Wind and water erosion in the coastal plains of the Southeast, water erosion in the hills, and soil compaction by agricultural equipment deserve attention. Neither erosion nor compaction is limited to the cotton field, but they are possibly more prevalent in cotton production than most crops. Excess traffic in cotton production by spray and dusting equipment is certainly a factor increasing soil compaction. This is particularly true following a wet spell when the soil is most susceptible to compaction.

The over-all research program must

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be geared toward reducing soil compaction and protecting the soil from erosion if the most profitable use of soil and water is to be excepted.

**Harvesting Equipment:** Fred A. Kummer, Auburn, Head, Agricultural Engineering Department, Alabama Polytechnic Institute.

In thinking about research needs for cotton harvesting equipment, we might think about this question: Why is so little mechanical harvesting done in the Southeast?

In my opinion, the problem is simply that we have not been able to reach the majority of our cotton farmers with the harvesting equipment as it is now available and priced — and with the quality of machine harvested cotton not usually being equal to that obtained by hand picking.

We are still following the age-old pattern of trying to force the sale of machinery that was developed for certain areas and requirements and make it work everywhere. That is true of cotton pickers and even more so of cotton strippers.

Most of us agree that a \$5,000 cotton picker should harvest at least 100 bales of cotton per year to be an economical investment. If \$5,000 is a fair price, that would mean a present-day cotton picker should be capable of picking two bales of cotton per year for every \$100 of initial

investment. It would mean further that the 8,600 farmers in the Southeast growing 100 acres of cotton or more could afford one or more \$5,000 machines, the 17,000 farmers growing 50-100 acres of cotton would need a \$2,500-\$3,000 machine and the 70,000 farmers growing 25-50 acres of cotton would need a \$1,250-\$2,500 machine. Based on the 1950 U. S. Census of Agriculture, this would represent a potential of: 8,000 or more machines in the \$5,000 range, 17,000 machines in the \$2,500-\$3,000 range, and 70,000 machines in the \$1,250-\$2,500 range in the Southeast alone.

The question which immediately arises is how can a low priced machine be produced. The answer is through simplification. My contention is that we can utilize more labor than we do now with mechanical harvesting equipment and thus through the combination of mechanical equipment and labor still accomplish a drastic reduction in hand labor over the present method of hand picking.

I believe that we must concentrate on the development of smaller machines. The price range must be suited to a much greater number of farmers of this area even though we may not be able to reach the man with five or ten acres of cotton. We must further concentrate on machine performance to harvest quality cotton under a wider range of conditions and, instead of following the leader, encourage a few original ideas.

The prevailing belief is that we cannot mechanize the small cotton farmer with an average of 25 acres of cotton. To be realistic, we should not expect a \$2,000 machine to do the work of a \$5,000 machine. Yet, we could attempt to develop a machine that could pick quality cotton although it may require more than one man to operate and considerably more time to pick a bale of cotton. With a spread of one to two man hours per bale for present machine picking and 50 man-hours per bale for hand picking, we could still reduce drastically the labor requirements with a machine that requires two or three times more labor to pick a bale of cotton than present machines, or requires more than one or two pickings to gather the crop. Assuming we had such a machine in the \$2,500 price range, we would have a potential of approximately 70,000 units in the Southeast alone.

Certainly, it would appear justifiable to invest a few million dollars to achieve a drastic change in the primitive method of hand picking cotton at the rate of 50 man-hours per bale. In this age of automation, it seems that agriculture is the only industry which can still tolerate such gross inefficiency of human labor.

The other alternative, of course, would be to do nothing about it and force the Southeast out of the cotton business by default.

#### Panel Discussion:

### Keeping the Quality Of Cotton High

LEADER: T. D. TRULUCK, Union, S.C., Deering, Milliken Service Corp.

Lint quality is a prime factor in cotton's race for markets. But things have been happening to cotton's good qualities — damaging things like contamination and actual injury to fibers. This damage has been occurring all along the line from the field to the spinning mill. It has been imposing a heavy and needless burden upon cotton in its race for markets. Actually, there are two ways to assess the far-reaching importance of this burden. First, we know that quality of the raw fiber has a whole lot to do with the quality of end products and consumer preference for them. So quality damage gives cotton a big set-back in this way.

But of equal importance is the effect of quality damage on mill processing costs. If cotton is difficult to process — and then if fabrics turn out with tar spots, or brown streaks, or other damage and have to be down-graded — mill costs go up sharply. In effect, this makes cotton a more expensive raw material to buy. It follows that an effective program of quality preservation, by making cotton cheaper to process, would amount to exactly the same thing as a reduction in the price that mills must pay for American cotton.

A big push is now under way to preserve cotton's outstanding quality all the way from the field to the spinning mill. It involves the cooperation of every segment of the cotton industry — growers, ginners, compress-warehousemen, merchants and spinners.

In addition, it calls for cooperation from many groups closely allied with cotton — farm educational workers, public and private research specialists, farm equipment manufacturers and dealers, pick sack manufacturers and dealers,

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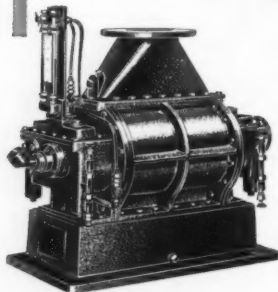
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**KEEPING COTTON'S QUALITY HIGH** was the theme for the discussion by this panel. Left to right are W. Kemper Bruton, Blytheville, Ark., executive vice-president, Arkansas-Missouri Ginners' Association; H. F. Miller, Washington, USDA; T. D. Truluck, Union, S.C., Deering-Milliken Service Corp., panel leader; A. M. Pendleton, Dallas, USDA; C. D. Tuller, Atlanta, C. D. Tuller Cotton Co., who presided over the session; and Robert Howard, Milwaukee, Allis-Chalmers Manufacturing Co.

railroad and trucking firms, and others.

Two of the most vital phases of the quality preservation program—better harvesting and better ginning—have been singled out for particular attention by this panel.

**For Public Research Services: H. F. Miller, Beltsville, Md., USDA.**

This discussion is limited to some of the quality phases of public research in harvesting and ginning. It includes work being done by state Experiment Stations, the Regional Cotton Mechanization Project, and the Mechanical Preparation and Conditioning and Farm Machinery Sections of USDA.

Some of the specific experiments in progress are as follows:

1. Timing defoliation and mechanical picking for maximum efficiency and lint quality. One year's results during last season at Stoneville, Miss., indicated that cotton defoliated when it was 65 percent open and picked 10 days later gave the over-all best results for machine efficiency and lint quality. Defoliating when 55 percent of the bolls were open gave only slightly higher foreign matter content and lower grade and did not adversely influence fiber development. This experiment will be continued.

2. The relationship of seed cotton moisture in the field to relative humidity and to amount of moisture applied to spindles in picking. The atmospheric conditions exert a greater influence on final seed cotton moisture than do different rates of water applied to spindles in picking. In one test seed cotton moisture declined from 18 percent to 10 percent from seven to eight o'clock in the morning as the relative humidity dropped from 90 to 50 percent. The use of a high rate of 13 gallons of water on spindles while picking one bale of cotton increased the seed cotton moisture by two percent. A low rate of five gallons increased seed cotton moisture only one percent. Future tests will include lint quality evaluations.

3. Picker spindle moistening test using different rates of water, wetting agent solutions, and textile oils. This was a very elaborate test in which many factors relating to picking, ginning, spinning and dyeing of the yarn were measured. The test was conducted in Mississippi and California. Only one year's results are available. The results mentioned here

should be considered as preliminary and not conclusive. The different rates or kinds of moistening agents did not show any difference due to treatment in (1) bleaching and dyeing tests, (2) measurable fiber or spinning properties, or (3) cleaning effectiveness of the gin machinery.

The test did show that when textile oil is used to moisten spindles, certain measurable quantities of oil will remain in the lint. A large amount of oil remaining in the lint could possibly have some harmful effect on mill operations. Further work is necessary to make this determination.

In California, textile oil kept spindles cleaner than the other wetting agents; machine picker efficiency was definitely less in the rates up to one-half gallon of oil per bale and slightly lower at a rate of .9 gallon of oil per bale; on the defoliated plots, there were no significant differences in grades between textile oil and other wetting agents; on plots not

defoliated, the grade was adversely affected by use of the textile oil.

In Mississippi, the machine picker efficiency was similar to California results in that it was significantly lower for treatments where up to one-half gallon of oil was used on the spindles, which was the highest rate used in the Delta test.

These lower picker efficiencies ranged from one to 2.5 percent less for the oil treatments. This difference in dollars was \$4.20 to \$10.50. Some of the cotton not harvested remained on the stalk and could have been recovered during a second picking. However, this efficiency factor should be given some consideration. Until we know more, there is no particular recommendation for or against the use of textile oil on picker spindles as far as lint quality is concerned. Effects of its use on picker efficiencies and milling operations may result in definite recommendations when further data are obtained. The tests will be continued.

4. The effect on grade of tramping machine picked cotton in trailers. Although the results of this experiment did not show too great a difference, they did show an adverse effect from tramping. Tests will be continued and possibly expanded to include a thorough study of types of foreign matter and ginning systems.

5. Adaptability of commercial and experimental varieties to mechanical harvesting. These tests were conducted in cooperation with plant breeders and machinery manufacturers and the results used for further improvement in varieties and machines. The tests are run at several locations and will be continued.

6. Detailed tests relating to varieties, types of pickers and different ginning processes have been and will continue to be conducted. Field conditions, weather and seasonal variations influence results and considerable work in harvesting and ginning is necessary for conclusive recommendations. As conclusions are reached, the results will be made available through publications, Extension Services and personal contacts.

Some of the other research projects in progress relating to cotton quality are

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investigations on stands, weed and insect control and defoliation, seed cotton handling and storage, adapting gin equipment to different locations in the Cotton Belt, development of apparatus and methods for faster ginning of extra-long-staple cottons, and methods for measuring and controlling moisture in the ginning processes.

For the Extension Services: A. M. Pendleton, Dallas, USDA.

The Extension Services of the cotton-producing states have long recognized the necessity of high-quality cotton. They have carried on continuous programs of cotton improvement by making available to farmers and ginners the latest research information on every phase of cotton production, harvesting and gin-

ning. Together with their partners in research, they have had a part in the great improvement cotton has achieved in fiber quality and efficiency.

But, in spite of all the advances cotton has made in recent years, we recognize that changes brought about by mechanization and other practices have brought us face to face with new problems in cotton quality.

• **Many New Problems** — What are some of the more serious problems? Spindle twist, green leaf stain, and oily cotton are associated with mechanical pickers which are improperly operated and maintained. Grass, weeds, vines and bark are taking an excessive toll of cotton profits because of poor late-season grass and weed control. Loss in quality though poor defoliation or from excessive regrowth of leaves is evident in most cotton areas. Defoliants or desiccants applied too early are a threat to the very fiber quality that breeders labored long to impart to our American cotton. Excessive foreign matter, both green and dry, is taking an unnecessary toll of the farmer's cotton dollar. Two-sided bales — two-sided because of the difference in grade, staple or in micronaire — are associated with rapid harvest and shortened ginning season. These and other fiber damages are resulting from the operation of harvesting machines in the fields that contain too much moisture on the plant, too much green foreign matter on the plant, improper operation of the machine in relation to moisture added, poor adjustments of parts within the machine, or faulty adjustment of machine to the row.

On every gin yard one can see the good and the bad machine-harvested cotton. Improperly harvested cotton may result in ginned samples bearing both the visual and hidden fiber defects that cause poor spinning performance and reduced profits for both producer and spinner. In spite of new and better gin machinery installed to handle machine-harvested cotton, we must remember that the settings of heat and cleaning machinery in the cotton gin are no longer subject to bale-by-bale changes. It takes from 15 to 20 minutes to heat the gin up or to cool it off. Therefore, try as he may, the best of ginners with the best of equipment may cause hidden damage by over-drying with its attendant loss in staple length, uniformity and increase in mill waste. On the other hand, under-drying causes a loss in grade that immediately affects the farmer's pocketbook.

The problem of storage has always been very difficult for the ginner during rush periods. It's especially important in the handling of mechanically-harvested cottons to which water has been added because excessively wet seed cottons containing a high percentage of green leaf will tend to transfer spot or stain from the foreign matter to the cotton fiber.

There are some of the problems that must be mastered if the high quality bred into American cotton is to be maintained under conditions of mechanization. But the problem is further complicated by the increasing amount of low grade hand-harvested cotton reaching the gin. In many cases cotton ginners report that the best machine-harvested cottons they receive are superior to some hand-harvested cotton brought to the gins.

• **New Program Started** — The Extension Services, therefore, recognize that an extra effort to improve harvesting and ginning must be exerted now and in the future until damage to cotton fiber is

minimized. We realize that they will never be completely eliminated.

A new program to improve cotton quality through better harvesting and ginning was set in force in the summer of 1955 and has been greatly expanded in 1956. This program is carried on in cooperation with the National Cotton Council, the manufacturers of all mechanical cotton pickers, the cotton ginners' associations, and cotton producer groups.

What is the purpose of this program? The specific purpose is to impress the largest possible number of cotton producers with the vital importance of securing the highest cotton quality possible as a result of latest research information on harvesting, handling and ginning of mechanically harvested cotton.

How are the Extension Services attempting to do this job? It is by holding meetings attended by owners of mechanical cotton pickers, harvesting machinery dealers, ginners and others concerned. At these meetings the following important points are clearly developed:

1. The necessity for higher quality cotton.
2. The effects of operating the mechanical pickers under unfavorable field conditions, such as excess moisture, extreme grassy conditions, etc.
3. The effect of machine maintenance and operation on cotton quality.
4. The importance of proper handling between the field and the gin.
5. Cooperation with the ginner to secure quality ginning.

A major effort is being directed to encourage farmers to allow cotton ginners to group cottons of like moisture and trash content together for ginning at one time. This makes it possible to avoid the losses from over-drying and over-cleaning or from under-drying and under-cleaning — losses which can't be avoided with the "first come, first served" system historically used.

Who is helping the Extension Services in this program? The National Cotton Council has contributed both materials

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and personnel. Research engineers of the USDA and state cotton mechanization projects have worked to make the program a success since its inception. The representatives and dealers of the manufacturers of cotton pickers have not only been in attendance at every single one of these meetings but are coordinating their schools for picker operators in the program so that the end result may be the largest possible number of trained operators available for the coming crop year. The ginners' associations and other industry groups have furnished speakers and printed materials and greatly assisted in contacting farmers concerning the program. The U. S. cotton ginning laboratories have been partners in the program from the start.

Is this program reaching the producers? In 1955 it was carried on in the states of Missouri, Louisiana, Arkansas, Mississippi, Texas and California. Large concentrations of mechanical cotton harvesters are found in these states. In 1956, Extension specialists in 13 states, from South Carolina to California, are working intensively to make this program a success. Beginning with meetings in the Rio Grande Valley of Texas in June and ending with meetings in Arizona and California in September, the program will reach almost every center of mechanical harvesting. Following the scores of "Quality Harvesting and Ginning" meetings will come literally hundreds of individual training schools for cotton picker operators held by dealers and manufacturers of mechanical harvesting equipment. We cannot help feeling that this program will result in more dollars for the farmer and a more acceptable product to the spinner. This

is only a part of Extension's cotton program, but this is how the Extension Services are conscientiously trying to carry their share of the responsibility for "keeping cotton's quality high."

**For the Farm Equipment Industry:  
Robert Howard, Milwaukee, Allis-Chalmers Manufacturing Co.**

Most of the problems confronting the farm equipment industry in "keeping cotton's quality high" result from improper care, adjustment and operation of machines by users.

The industry's part in the quality harvesting program consists primarily in providing training in proper operation and maintenance of machines. "Picker twists" probably rank as the No. 1 problem—so much so that in 1954, approximately one bale in every four of machine-picked cotton was not readily acceptable at the mills. However, this should not be a reflection on the quality of work possible with a mechanical cotton picker. Twists can be held to a very acceptable minimum by keeping a picker in good mechanical condition, adjusting doffers correctly so cotton will be removed from spindles properly, applying the correct amount of water, not picking when cotton is green or damp, using recommended machine speeds when operating in field, maintaining clean spindles and following manufacturer's suggested harvest practices outlined in the operator's manual.

Green leaf stain is usually the result of poor defoliation, regrowth, extreme moisture from picking when too green or too damp, improper adjustment of stalk plate or crowders, too much pressure on

plants, excessive picking caused by tramping of cotton in picker basket or trailer, or improper storage.

Immoderate trash initially is the common result of just poor housekeeping as far as the mechanical picker is concerned, usually resulting from accumulation of lint streamers, fly and trash building up and then falling into seed cotton in bunches.

Oil and grease spots can be avoided by not over-lubricating and by a thorough cleaning of picker drums or units at the end of each day's operation.

The operation of a mechanical cotton picker is not complex, but because of the very nature of the crop being handled, a certain amount of time must be spent each day in cleaning, maintaining and adjusting the machine.

The man who owns and operates his machine personally; the man who owns several machines, hires operators, is himself an operator and does his own supervising; the man who owns a large fleet of cotton pickers, who has hired operators with one or more supervisors; custom operators who fall in one or more of the above categories; all these must be made aware of the importance of quality harvesting, and the cost of improper maintenance, cleanliness or adjustment.

In the past there has been a lackadaisical attitude on the part of many of these people concerning the operation of a mechanical cotton picker. Implement dealers would hold schools for operators and only a few people would attend; also, owners would come and not operators or supervisors; thus, the information in many cases did not reach the place where it would do the most good.

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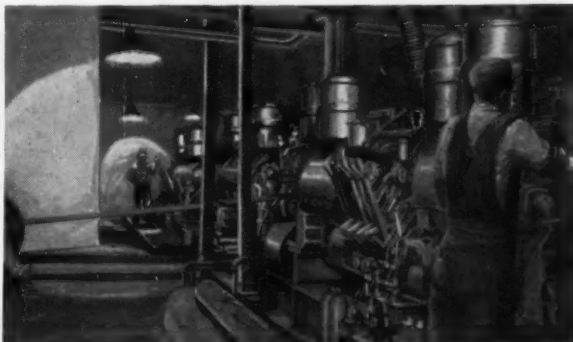
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very extensive dealer training programs covering operation, maintenance, adjustment, and repair of cotton pickers. In 1955 these dealer training programs placed special emphasis on quality harvesting. Dealers were urged to include a program on quality harvesting in all operator schools they held.

Along with Extension Service programs conducted in most areas, these dealer and operator training programs produced a marked trend upward in attitude of operators and owners. The job is far from finished, however. To be ultimately successful this must be a long-range program.

The manufacturers of mechanical cotton pickers are this year again cooperating with the Extension Service on its program of quality harvesting, in order to better point up the importance of the operator schools.

These schools, coupled with individual instruction by the dealers at the time machines are delivered, will furnish the information needed for efficient operation of mechanical cotton pickers.

For Ginners' Associations: W. Kemper Bruton, Blytheville, Ark., Arkansas-Missouri Ginners' Assn.

No gin can remove a tar spot or a green leaf stain from a farmer's cotton.

No matter how much elaborate and expensive cleaning equipment and drying equipment the ginner may install, he cannot perform a "miracle" by producing Middling cotton from the soggy, firmly packed mixture of water, green leaves, sticks, stems, bolls, burs, stalks, oil, tar, grease, bottle caps, rocks, clothing and live animals so often delivered to him for ginning.

It must be admitted at this point, however, that the ginner himself is largely responsible for the discouraging amount of this type of harvesting because he (or his cooperative competitor) has impressed the farmers in general that his new cleaning and/or drying system will "really" do the job on cotton in any condition.

Therefore, I would say at the outset of this phase of this discussion that the number one job of the ginner—if he is to enter into the battle for quality preservation—is to put his full energies behind a vigorous educational program aimed at his farmer customers. Such a program must be designed to acquaint them with the facts about the relationship of proper cultural practices and harvesting methods to good ginning—and good ginning to me means ginning that will insure new markets and preserve old ones by delivering maximum quality—not "turn-out"—to our customers.

An active ginners' association is a

prime necessity in this number one problem. An individual ginner needs tools with which to educate his customers. His association can afford him those tools through cooperative efforts with Extension Services, farm groups, machinery manufacturers, spinner and other industry organizations, and the National Cotton Council. Such cooperative moves are reflected in recent gin schools, mechanical harvesting schools and industry conferences held in various states. His association can also give him tools through posters, leaflets, charts, pictures, etc., which he can use to illustrate the importance of quality preservation.

The second problem, as I see it, is complicated and controversial but must be solved if the industry as a whole is to continue in business. It embraces a whole mess of antiquated customs which are jeopardizing our very existence as producers and processors of fiber. It begins with the general attitude of the cotton producer toward his commodity. Does he have respect for the perishability of inherent quality in the fiber he strains to produce? Does he understand—or care about—the comparative care that is given competing fibers in their increasingly successful attempts to win cotton's markets? I feel sure that you will agree with me when I say he doesn't. And therein lies a challenging program of education for all cotton producer organizations. Certainly, the other segments of the industry, especially the ginners, should help in this major job. And I say "especially the ginners" because they're all farmers and education should begin at home.

Ginners, however, are shackled with some antiquated customs, too, that have a direct bearing on quality preservation. Not the least of these is a hodge-podge, "give-it-here and take-it-there" system of assessing for the basic service they render. An age-old "I'll break that so-and-so" attitude among ginners defeats the fundamental principles of good business and without those principles in ginning you cannot hope for maximum efficiency in preserving quality. No business can operate efficiently and profitably unless a careful analysis is made and maintained in terms of cost and income for producing or delivering maximum quality in product or service.

Unfortunately, few ginners maintain their business through such analyses. Rare indeed is he who isolates seed and lint sales, fertilizers, insecticides, defoliants and the dozens of other "free" services he performs in order to insure (he hopes) another bale of cotton for ginning. It seems to me that any processing or manufacturing plant should at all times keep close and accurate check on actual operational cost versus income from the basic process performed if it would be on a sound basis.

On this I base my belief that a new day must dawn among ginners of the Belt before we can expect the maximum in quality preservation. Uniform good business practices among ginners will justify adequate expenditures for qualified, mechanically trained operators who will know where, when and how cotton quality can be lowered through improper ginning. Such an adjustment in the general business-like conduct of the ginning industry will serve as an incentive for young men—our future agricultural engineers—to include ginning as a trade.

I sincerely feel that our ginners' organizations have a tremendous responsibility in trying to bring this about.

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# CALENDAR

## Conventions • Meetings • Events

12	13	14	15	16	17	18
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• Dec. 13-14 — Second annual Cotton Production Conference. Tutwiler Hotel, Birmingham, Ala. For information, write National Cotton Council, P. O. Box 9905, Memphis, Tenn.

1957

• Jan. 23-25 — Southern Weed Conference. Bon Aire Hotel, Augusta, Ga., Dr. W. B. Albert, South Carolina Experiment Station, Clemson, president.

• Jan. 28-29 — National Cotton Council of America annual meeting. Jefferson Hotel, St. Louis. For information, write Wm. Rhea Blake, executive vice-president, P. O. Box 9905, Memphis, Tenn.

• Jan. 31-Feb. 1 — Carolinas Ginners' Association annual convention. Clemson College, Clemson, S.C. Clyde R. Allen, executive secretary, P. O. Box 512, Bennettsville, S.C.

• Feb. 4-5 — Texas Cooperative Ginners' Association, Houston Bank for Cooperatives and Texas Federation of Cooperatives joint meeting. Rice Hotel, Houston. For information, write B. E. Schroeder, 307 Nash Building, Austin.

• Feb. 4-5 — Cottonseed Processing Research Clinic. Southern Regional Research Laboratory, New Orleans. Sponsored by Valley Oilseed Processors' Association and USDA. C. E. Garner, 1024 Exchange Building, Memphis, Association secretary.

• Feb. 12-13 — Southeastern Gin Suppliers' Exhibit. Biltmore Hotel, Atlanta. Sponsored by Southeastern Ginners' Council, composed of ginners of Alabama, Georgia and Florida. For information and space, write Tom Murray, 714 Henry Grady Building, Atlanta 3.

• Feb. 27-March 1 — Cotton Research Clinic. General Oglethorpe Hotel, Savannah, Ga. For information, write National Cotton Council, P. O. Box 9905, Memphis.

• Feb. 28-Mar. 1 — Oklahoma Cotton Ginners' Association annual convention. Skirvin Hotel, Oklahoma City. Edgar L. McVicker, 1004 Cravens Building, Oklahoma City, secretary-treasurer.

• March 5-6 — Western Cotton Production Conference. Hotel Westward Ho, Phoenix, Ariz. Sponsored by Southwest Five-State Cotton Growers' Association and National Cotton Council.

• March 11-13 — Midsouth Gin Supply Exhibit. Midsouth Fairgrounds, Memphis. For information, write W. Kemper Bruton, P. O. Box 345, Blytheville, Ark. Arkansas-Missouri, Louisiana-Mississippi and Tennessee ginners' associations sponsor the exhibit and will hold their annual convention concurrently.

• March 11-13 — Arkansas-Missouri Cotton Ginners' Association annual convention. Memphis. W. Kemper Bruton, P. O. Box 345, Blytheville, Ark., executive vice-president. Concurrent with Midsouth Gin Supply Exhibit.

• March 11-13 — Louisiana-Mississippi Cotton Ginners' Association annual convention. Memphis. Gordon W. Marks, P. O. Box 1757, Jackson, Miss., secretary. Concurrent with Midsouth Gin Supply Exhibit.

• March 11-13 — Tennessee Cotton Ginners' Association annual convention. Memphis. W. T. Pigott, Milan, Tenn., secretary-treasurer. Concurrent with Midsouth Gin Supply Exhibit.

• March 25-26 — Valley Oilseed Processors' Association annual meeting. Buena Vista Hotel, Biloxi, Miss. C. E. Garner, 1024 Exchange Building, Memphis, secretary.

• Apr. 30-May 1-2 — Spring meeting of American Oil Chemists' Society. Roosevelt Hotel, New Orleans. For information, write American Oil Chemists' Society, 35 East Wacker Drive, Chicago.

• April 1-3 — Texas Cotton Ginners' Association Convention, State Fair of Texas grounds, Dallas. Ed H. Bush, executive vice-president, 3724 Race Street, Dallas. For information regarding exhibit space, write R. Haughton, president, Gin Machinery & Supply Association, P. O. Box 7985, Dallas 26.

• May 2-3 — National Cotton Compress and Cotton Warehouse Association annual convention. Roosevelt Hotel, New Orleans. John H. Todd, 1085 Shrine Building, Memphis, executive vice-president.

• May 8-10 — Oil Mill Operators' Short Course. Texas A. & M. College, College Station. Sponsored by Texas Cottonseed Crushers' Association and International Oil Mill Superintendents' Association. For information, write Dr. J. D. Lindsay, Texas A. & M. College.

• May 14-15 — Oklahoma Cottonseed Crushers' Association annual convention. Western Hills Lodge, Sequoyah State Park, Wagoner, Okla. Edgar L. McVicker, 1004 Cravens Building, Oklahoma City, secretary-treasurer.

• May 20-21 — National Cottonseed Products Association annual convention. Shoreham Hotel, Washington, D.C. John F. Moloney, 19 South Cleveland Street, Memphis, secretary-treasurer.

• June 3-4 — Alabama-Florida Cottonseed Products Association and the Georgia Cottonseed Crushers' Association joint convention. Edgewater Gulf Hotel, Edgewater Park, Miss. For information, write C. M. Scales, 322 Professional Center,

Montgomery 4, executive secretary, Alabama-Florida Association; J. E. Moses, 318 Grand Theatre Bldg., Atlanta, secretary of Georgia Association.

• June 5-6 — Tristates Oil Mill Superintendents' Association annual convention. Peabody Hotel, Memphis. Roy Castillow, 20 Lenon Drive, Little Rock, Ark., secretary.

• June 16-18 — Joint annual convention of South Carolina Cotton Seed Crushers' Association and North Carolina Cottonseed Crushers' Association. Fort Sumter Hotel, Charleston. Mrs. M. U. Hogue, 612 Lawyers Building, Raleigh, secretary-treasurer, North Carolina Association; Mrs. Durrett L. Williams, 609 Palmetto Building, Columbia, secretary-treasurer, South Carolina Association.

• June 16-19 — International Oil Mill Superintendents Association. Hilton Hotel, El Paso. For information, write H. E. Wilson, secretary-treasurer, P. O. Box 1180, Wharton, Texas.

• June 19-20-21 — Southwestern Peanut Shellers' Association annual convention. Menger Hotel, San Antonio, Texas. For information, write John Haskins, Durant Peanut Co., Durant, Okla., secretary-treasurer.

• Sept. 30-Oct. 1-2 — Fall meeting of American Oil Chemists' Society. Cincinnati. For information, write American Oil Chemists' Society, 35 East Wacker Drive, Chicago.

• Oct. 2-3-4 — Beltwide Mechanization Conference, Shreveport, La. For information, write National Cotton Council, P. O. Box 9905, Memphis.

## Fewer Horses, More Camels

Tractors are replacing horses throughout the world at a rate of about one million a year, the International Federation of Agricultural Producers estimates. World horse population has dropped from 74.7 million before World War II to 59 million. Mules have declined from 18 million to 14 million, but the camel population has risen from 7.8 million to 10 million.

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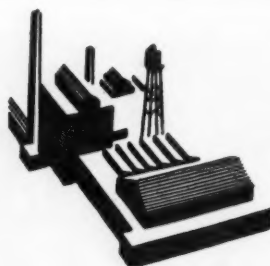
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The first great-grandchild had arrived in a family. It was of great importance—particularly to the great-grandmother. So when the baby was brought home from the hospital, the great-grandmother couldn't wait to see her first great-grandchild. She came over to her granddaughter's apartment, was wheeled into the room right after the baby had been given its bath and was lying naked as a jaybird on the bathinette. The old lady looked the baby over very carefully and turned to her granddaughter, and said: "It certainly is a beautiful baby, Helen, but what is it? A boy or a girl?" The granddaughter smiled sweetly at her old granny and said: "Why, grandmother, your eyesight must be failing you."

Her grandmother replied: "It's not my eyesight—it's my memory."

A motorist and his wife traveling through the Blue Ridge mountains of Tennessee stopped at a one-pump gas station before a mountaineer's cabin. After the man told the proprietor to fill the tank, his wife asked: "Is there a rest room here?"

Gas Man: "No, Ma'am, there isn't but you'll find a mighty comfortable rocker up there on the porch."

Him: "You look shorter in a bathing suit."

Her: "Yah, but I notice it makes you look longer."

O'Leary's wife woke in the middle of the night to hear her husband creeping about the kitchen.

"What might ye be looking for, darlin'?" she called out.

"Nothin'," called back O'Leary. "Just nothin'."

"Oh!" said his wife cheerfully. "Then you'll find it in the bottle where the whiskey used to be."

Mark Twain, in his reporting days, was instructed by an editor never to state anything as a fact that he could not verify from personal knowledge. Sent over to cover an important social event soon afterward, he turned in the following story: "A woman giving the name of Mrs. James Jones, who is reported to be one of the society leaders of the city, is said to have given what purported to be a party yesterday to a number of alleged ladies. The hostess claims to be the wife of a reputed attorney."

A young man who had just received his degree from college rushed out and said, "Here I am, World; I have my A.B."

And the World replied: "Sit down, Son, and I'll teach you the rest of the alphabet."

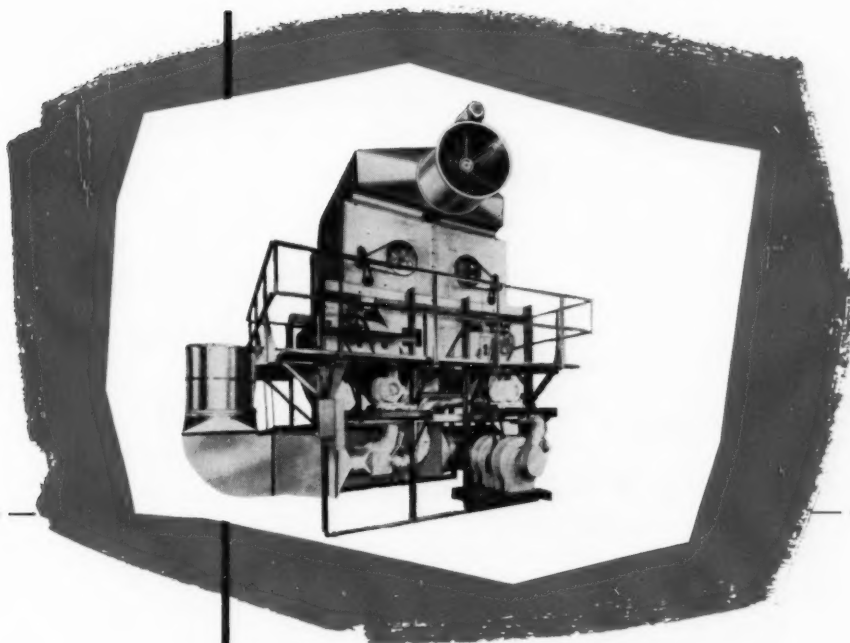
A city man took his son to the county fair and pointed out the champion bulls, pigs, goats, chickens, and so on. Then father asked, "Any questions?"

"Yes," said Junior, "who did they have to fight to get to be champions?"

Two collegians were walking toward each other on the campus and one was very bowlegged. The normal one out of curiosity said, "Texan?"

The other poor fellow whipped back, "Nope, short bunk."





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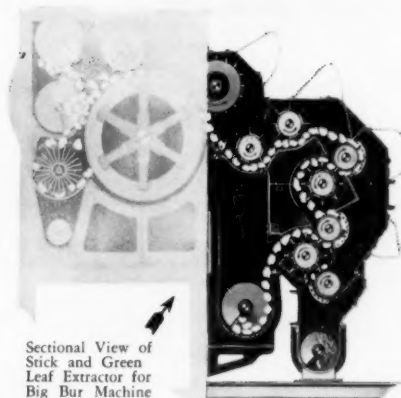
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and leaves"*

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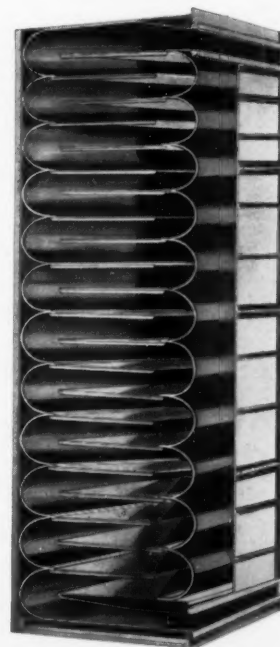
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